

Cambridgeshire County Council.

ANNUAL REPORT

OF THE

Medical Officer of Health

FOR THE

Administrative County of Cambridge

For the Year 1913.

Cambridge :

THE CAMBRIDGE EXPRESS PRINTING Co., Ltd., 36, KING STREET.

PREFACE.

During 1913 both the birth-rate and death-rate from all causes were lower than in any previous year. After correction for differences in age and sex distribution the death-rate for both the urban and rural areas compared very favourably with the rates for urban and rural England and Wales. Following the low rate of 1912, there was some rise in infantile mortality, attributable to climatic conditions. The County Council have taken an important step in resolving to adopt the Notification of Births Act for the rural area. The consequent supervision in the homes should result, not only in saving of infant life, but in a healthier upbringing of the children, and therefore a higher physical standard in the future.

Scarlet fever and diphtheria continued to be prevalent in both rural and urban areas, though to a much less extent than in 1912. The need for increased isolation hospital accommodation was again exemplified, and at the Cambridge Borough Isolation Hospital new pavilions are under construction. The Rural District Councils concerned have expressed their willingness to send representatives to confer with the County Public Health and Housing Committee regarding the provision of additional accommodation. This question is linked up with that of the provision of institutional accommodation for persons suffering from tuberculosis, and a joint scheme is worthy of consideration on grounds of economy and efficiency.

An important step has been the inauguration of a provisional tuberculosis scheme by the appointment of a Tuberculosis Officer and a Tuberculosis Nurse for the County. They are now at work, and a dispensary system is being evolved, but a necessary development will be the provision of sanatorium accommodation for early cases and of beds for the isolation of advanced cases if real progress is to be made in reducing the preventible mortality from tuberculosis, and the great distress and economic loss resulting from its prevalence. In the meantime efficient and sympathetic home supervision is of the utmost importance, and experience has already proved, as was anticipated, that an additional nurse is needed if the rural districts are to benefit equally with the urban area.

Two questions intimately associated with tuberculosis are housing and milk supply. From personal observation I am quite convinced that progress in combating tuberculosis will be much retarded, in the rural areas especially, until roomier and more sanitary houses are available for the poorer working classes. Both physical health and moral upbringing are necessarily prejudiced by existing conditions, and it is encouraging to note that a more general interest in the housing question is certainly being aroused and that local enquiries have been held in various parishes in the County. Housing schemes in several Sanitary Districts are at present on foot, notably in Cambridge Borough and in the parishes of Gamlingay and Cottenham, and I would point to Melbourn and Meldreth as being especially in need of a housing scheme.

The County Council are considering the question of housing certain classes of their employees where there is a shortage of suitable houses, and I hope that it will be found practicable to adopt this policy.

The Council have set up machinery during the year for the inspection of cattle notified under the Tuberculosis Order of 1913, and new duties are placed upon them under the Milk and Dairies Act of 1914, for which administrative provision will require to be made in the Public Health Department, as the Council will in future control the supply of milk which is under suspicion of causing tuberculosis.

Some advance has been made in the public supply of water. Cheveley and Wood Ditton are now supplied from the Newmarket Rural District Council's new works at Saxon Street, and a scheme for a supply to the parish of Caxton has been finally approved by the Caxton and Arrington Rural District Council. A public supply for Soham has also been resolved upon, but the negotiations for the supply of Croxton and three adjoining parishes in Caxton and Arrington Rural District continued to be protracted.

FRANK ROBINSON,

County Medical Officer of Health.

County Public Health Department,
Cambridge.

PRINCIPAL ITEMS OF STATISTICAL INTEREST.

Area of Administrative County (exclusive of water) - - - - -	314,520 acres.
Population, 1911 Census - - - - -	128,322
„ estimated to middle of 1913 -	130,253
Average number of persons per acre -	2.4
„ „ „ „ dwelling -	4.15
Number of Inhabited Houses - - - -	30,950
„ „ Separate Occupiers - - - -	31,280
Number of Urban Sanitary Districts -	1
„ „ Rural Sanitary Districts -	6
„ „ Parishes - - - - -	131
Birth Rate, per 1,000 living	19.3
Death Rate (Net), per 1,000 living ...	12.7
Death Rate (Standardised), per 1,000 living	10.7
Death Rate from Epidemic Diseases ...	0.93
Death Rate from Pulmonary Tuberculosis	0.83
Death Rate from other Tubercular Diseases	0.23
Death Rate from Cancer	1.31
Death Rate from Respiratory Diseases	1.52
Deaths under one year of age, per 1,000 registered <i>births</i>	75

£ s. d.

Rateable Value :

Land	219,354	0	0
Buildings	607,706	0	0
Assessable Value	717,383	0	0
Product of rd. Rate	2,989	1	11

County Rates :

General Purposes... ..	1	0 $\frac{3}{4}$
Special Purposes... ..	1	2 $\frac{1}{2}$

MEDICAL OFFICERS OF HEALTH TO LOCAL SANITARY AUTHORITIES.

Sanitary District.	Medical Officer of Health.
Cambridge Urban ...	Andrew J. Laird, M.D., D.P.H.
Caxton & Arrington Rural	T. Poyntz Wright, M.R.C.S.E., L.S.A.
Chesterton „	Bushell Annington, M.D., M.A.
Linton „	William Armistead, M.B., F.C.S.
Melbourn „	Bushell Annington, M.D., M.A.
Newmarket „	William Armistead, M.B., F.C.S.
Swavesey „	Bushell Annington, M.D., M.A.

ADMINISTRATIVE COUNTY.

Frank Robinson, M.D., D.P.H., Medical Officer of Health and
School Medical Officer.

Jessie H. Gellatly, M.D., D.P.H., Assistant Medical Officer of
Health and School Medical Officer.

F. C. Davies, M.A., M.B., M.R.C.P., Tuberculosis Officer.

P. C. Varrier Jones, M.A., M.R.C.S., L.R.C.P., Acting
Tuberculosis Officer.

J. West Knights, F.I.C., F.C.S., Public Analyst.

Annie R. Wilson, Inspector of Midwives.

K. Bourn, Tuberculosis Nurse.

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- I. Vital Statistics of the Administrative County.
- II. Notification of Infectious Diseases in County and Districts.
- III. Causes of, and Ages at, Death in the Administrative County and its Districts.
- IV. Infantile Mortality in the Administrative County.
- V. Vital Statistics of the Separate Districts.
- VI. Deaths from the seven principal epidemic diseases in the Administrative County and its Districts.
- VII. Summary of Notifications of Tuberculosis.

INDUSTRIES.

The Borough of Cambridge, besides being the seat of the University and the centre of the County Administration, is also the market town for the surrounding rural districts. Outside the Borough the main industry is agriculture, the bulk of the county area being under cereal and root crops or pasturage. The production of milk and butter constitutes a trade of some importance, but cheese making has for some years been a declining industry.

The large jam factory at Histon provides occupation for more than 1,000 workpeople, the related fruit growing and garden produce industries affording occupation for the inhabitants of a considerable number of villages in the north-west portion of the County. Market gardening and fruit growing is also carried on in other districts.

With the object of advising farmers in the Eastern Counties on agricultural matters the Board of Agriculture makes an annual grant of £1,000 from the Development Fund to the School of Agriculture of the University of Cambridge. The County Education Committee also give financial support to the University Board of Agricultural Studies.

The special department set up includes a chemist, a biologist, and an agriculturist, who furnish information and carry out experimental investigations as required. The recent work of the Department includes a survey of the soils and agriculture of the Eastern Counties, and advice has been given on insect or fungoid diseases of cereal and other plants, the value of feeding stuffs, the suitability of manures for special soils, and of crops for soils. The work of the School on the

chemistry of flour, and the production of new and useful varieties of wheat, has gained world-wide recognition.

There is no mining in Cambridgeshire in the usual sense of the term, but the digging of material and the further processes in the manufacture of cement and bricks constitute important industries. Chalk marl is dug for cement making as at Shepreth, Meldreth, Cherryhinton, and Burwell. Lime is also quarried for burning into mortar. There being little stone suitable for outside building material within the County, brick-making is an important industry, the gault clay being dug for this purpose at Barnwell, Barton Road (Cambridge), Burwell, Soham, Chesterton, Impington, and Clayhithe, while the Ampthill clay affords material for brick-making at Gamlingay.

Artificial manures are manufactured at Burwell and Duxford, chiefly from imported materials.

Machinery is manufactured at Wimpole, and there is also a foundry and agricultural implement factory at Whittlesford.

The paper mills and factories for chamois leather and parchment afford occupation for the inhabitants of Sawston, Whittlesford and Pampisford. In addition to the Pitt Press and other important printing and publishing establishments in Cambridge are printing works at Sawston, and the Burlington Press at Foxton.

Brewing is carried on at Cambridge and Pampisford, and mineral waters are manufactured at Sawston and Burwell. Among other industries are basket-making at Over and in the neighbourhood of Cambridge, and home work for the clothing and glove-making trades in various parts of the County.

WATER SUPPLY.

SOURCES OF SUPPLY.

The chief geological formations from which water is derived in this County are the Lower Chalk and Lower Greensand, but some districts rely upon wells in the Jurassic Clays, Boulder Clay, and in gravel. A few parishes drink rainwater, and water from springs, water-courses, ponds and ditches. There are many shallow wells which in some parishes are still the sole means of supply.

Chalk.—The Middle and Lower Chalk outcrop over a considerable area in the Melbourn, Linton, Newmarket and Chesterton Rural Districts. The Upper Chalk is but little exposed in this County, being covered by Boulder Clay.

The Lower Chalk reaches the surface in a line running almost directly South West to North East from Ashwell on the Hertfordshire border, to Isleham on the Suffolk boundary. The springs thrown out at its base are of comparatively small importance, but a great volume of water accumulates in beds of hard fissured rock which occur in the chalk marl. Though rather hard, the water is of excellent purity when not polluted by local conditions, but where such influences exist it is peculiarly liable to become contaminated because of the numerous fissures in this geological formation.

Lower Greensand.—This is a water-bearing stratum of very great importance, and an excellent supply is obtained from borings in some villages in the Caxton and Arrington, Chesterton, Newmarket and Melbourn Rural Districts. Private wells are also sunk into this stratum in the Borough. Some 200,000 gallons per day are raised from it at Cherry-

hinton by the Cambridge University and Town Waterworks Company as part of their supply. The water is rather hard and apt to contain iron, but otherwise of excellent quality. Where Gault Clay overlies the Lower Green Sand its impermeable character prevents any possibility of pollution by surface contamination, while the water is effectually freed by natural filtration from any polluting matter which may have gained access to the Greensand at its outcrop. On the outcrop itself the value of the supply varies with exposure, or otherwise, to pollution from local conditions.

The outcrop of this stratum within the County area is a limited one, a narrow strip extending from the neighbourhood of Boxworth to beyond Cottenham, and the thickness of the formation is said not to exceed 70 feet. On these grounds the supply cannot be regarded as unlimited, and there is reason to believe that the water level has been falling for some years.

*Jurassic Clays (Oxford, Ampthill and Kimeridge).—*These clays outcrop in the North West of the County, reaching the surface in the Caxton and Arrington, Swavesey and Chesterton Rural Districts. Water is contained in bands of limestone and fossils, but is limited in quantity and uncertain in site. The depth to which it would be necessary to bore in order to reach the abundant supply which is believed to be beneath the Oxford clay is probably very considerable.

Boulder Clay.—This formation covers a wide area of the Caxton and Arrington Rural District, and also the high lands in the South East of the County. Its permeability is slight, and the volume of water derived from it is therefore limited, but in some villages, *e.g.*, in Linton Rural District, springs or wells in the boulder clay are said to be the only

available sources of supply. The water is usually very hard and may be brackish, but is not otherwise of bad quality.

Gravels.—Where held up by an underlying stratum of clay an abundant supply of water may be obtained, but the source is an unsatisfactory one, as the volume is readily reduced by drought, and there is great liability to local pollution. The Chesterton, Swavesey and Caxton and Arrington Rural Districts may be mentioned in this connection.

Rainwater is only exceptionally the source of supply of drinking water. The impurities derived from the roofs of dwellings, from which as a rule it is collected, render its use undesirable for drinking purposes. Its use is only permissible where the cost of water of a better class is prohibitive.

Springs and Water-Courses in this County are mainly derived from the chalk. They afford an excellent supply but are liable to pollution.

Ponds, Ditches and Shallow Wells.—Sources of this character are still utilised in the Caxton and Arrington, Linton and Melbourn Rural Districts, and shallow wells are the sole source of supply of various villages in other parts of the County. There is great danger of surface pollution from the methods adopted for the disposal of human excreta, from manuring the land, etc., and the volume available is much affected by seasonal variations. Such sources undoubtedly constitute a danger to the health of a community.

SUPPLY OF INDIVIDUAL DISTRICTS.

The *Borough of Cambridge* obtains a constant supply from the Cambridge University and Town Waterworks

Company. The Company's present supply is derived from the neighbourhood of the villages of Fulbourn and Cherryhinton, in the Chesterton Rural District, about six-sevenths from the Lower Chalk and the remainder from a Lower Greensand boring. The mixed water from these sources is finally distributed by gravitation. At the completion of the works now in progress at Fleam Dyke the existing wells in the Lower Chalk will be abandoned.

The average daily consumption per head is 26 gallons.

The Water Company's supply has been laid on to houses in Brookfields, formerly supplied by wells.

Caxton and Arrington.—The thickness of the Jurassic Clays, and the very limited supply obtainable from the Boulder Clay, which covers a large part of this District, constitute a serious difficulty. Shallow wells are sunk into the gravel overlying the clays, but the water is liable to surface pollution, and to seasonal variations in quantity.

The East Hunts Water Company's boring into the Lower Greensand supplies Knapwell, and parts of Bourn, Conington and Longstowe. Inhabitants of New Wimpole are permitted the use of water from a deep well sunk into the Lower Greensand or Jurassic Clays at the local machine factory. At Gamlingay and Elsworth water is derived from wells in an outcrop of the Lower Greensand ; and at East Hatley there is a well in the same stratum over 200 feet in depth.

Neither of the two schemes for public supplies in this District were carried into effect during 1913. I am very glad to learn that the contracts have now been sealed for the work incident to the supply of Caxton village by the East

Hunts Water Company, and that the mains will be carried to the Workhouse. The objection raised to the amount of iron which this water is said to contain has been met by a scheme of filtration. As the main will pass through Caxton End, Bourn, a supply will be available for this area also, where many houses are dependent upon a pond and a stream, which are liable to contamination.

The scheme for the supply of Croxton, Eltisley, Graveley, Papworth St. Agnes and Papworth Everard is, unfortunately, still unsettled. Alternative proposals to the scheme for a supply from Great Paxton (Hunts) have been made, and the question whether this supply or that of the St. Neots (Hunts) Urban District Council will be used is still *sub judice*.

Chesterton Rural.—The West and North West portions of this district stand on the gault, and by boring through this stratum a pure supply can be obtained from the Lower Greensand. Gravel patches are also utilised, such supplies being commonly liable to contamination. There is a considerable area of fen deposit in the North, and some outcrop of the Jurassic Clays. The Southern and Eastern portions of the district rest on the chalk.

There are public supplies to 30 of the 37 parishes in the district.

The piped supplies are as follows :—Cambridge Waterworks Company supplies Cherryhinton, Fulbourn, Great Shelford, Trumpington, Grantchester, Histon, Impington, and part of Fen Ditton ; and mains have now been laid in Great Wilbraham in connection with the new source of supply of this Company.

Cottenham Water Company supplies Cottenham and Rampton from a well in the Lower Greensand.

Willingham Water Company supplies Willingham from a well in the gravel.

Longstanton has a piped supply from a well in the gravel.

Madingley has a piped supply from the Lower Greensand.

Dr. Anningson gives a list of 14 villages with public pumps to wells in the Lower Greensand, and one from springs from the same stratum. Also two public wells in the chalk (one bored), and two others in the gravel.

Linton Rural District.—The chief source of supply is the chalk, wells being sunk directly into it or bored through boulder clay.

There is no piped service in this district. Fourteen of the 20 parishes have a public supply provided by the District Council by means of wells and pumps, in almost all cases from the chalk, the depth of the wells usually being considerable. The public supply at Horseheath consists of filtered pond water and water from a spring. Pond water is drunk also in some six other parishes in addition to the public supply.

The six parishes which, judging from Dr. Armistead's list of wells, are without a public supply provided by the District Council, are Great and Little Abington, Bartlow, Duxford, Hildersham and Shudy Camps. All of these obtain water from wells in the chalk, the maximum depths of which vary from 28 to 240 feet, and the minimum from 7 to 20 feet.

Melbourn Rural District.—This district, which includes 19 parishes, stands on the Chalk and Gault Clay, except in the extreme south. The Chalk is of no great depth, and a good supply of pure water is readily available by boring through the Gault Clay into the Lower Greensand. Much water runs to waste from these artesian borings, both public and private, and also from abandoned borings formerly in use in connection with the coprolite industry. The parishes which derive public supplies from this stratum, or where such supplies are accessible to the public, are Abington Pigotts, Barrington, Bassingbourn, Foxton, Meldreth, Kneesworth, Shingay, and Whaddon.

In all these parishes the water is obtained from stand-pipes, pumps, etc., there being no mained supply.

At Melbourn water is piped by a private company from a well in the chalk; there are few consumers. The main has recently been extended to the Council School.

At Great and Little Chishall, where water is only reached at a depth of about 300 feet in the chalk, part of the supply is from wells and part from ponds after filtration. The remaining parishes obtain their water from natural springs and water-courses, or from surface wells, many of which are liable to contamination.

Newmarket Rural.—In this District the chalk is partly exposed, but is covered by boulder clay on the rising ground to the South, while to the North chalk and gault are covered by fen deposits. The chief supply of water is derived from the chalk, in the valley from shallow wells dug in the chalk or in the overlying gravel, but on the higher ground from deep wells through the boulder clay, where also there is some

dependence upon ponds. To the North wells are bored to the Lower Greensand in some parishes, and there are some shallow wells in the boulder clay.

The piped public supplies are as follows :—

Newmarket Waterworks Company supply a few houses in the parish of Wood Ditton.

Stetchworth parish is supplied from the Rural District Council's Waterworks from a deep well in the chalk.

Cheveley, Wood Ditton and Saxon Street are now supplied by the Rural District Council from their new works at Saxon Street. It has also been proposed to supply the parishes of Ashley and Kirtling from this source. Of 32 samples of water from these two parishes analysed during the year, 17 have afforded evidence of pollution.

The total estimated cost of the new works at Saxon Street is £4,600. Water is pumped from a well bored into the chalk to a depth of 400 feet, and the storage tank has a capacity of 45,000 gallons, nearly three days' supply. The total length of the mains exceeds five miles. The scheme is on the constant service principle.

Dr. Armistead's table of wells indicates that there are bored wells into the Lower Greensand in the five parishes of Bottisham, Burwell, Soham, Swaffham Bulbeck and Wicken. Correspondence passed during the year between the County and Rural District Councils with reference to the water supply to Soham and Fordham upon which I reported unfavourably to the former authority. Two new borings were made at Soham into the Lower Greensand, bringing the

number of these borings up to nine. The water from one of the new borings proved to be polluted, and the well was abandoned. A piped service is undoubtedly needed for this parish, and during the present year the District Council have resolved to adopt a scheme for the distribution of water from the chalk.

At Lode, a well bored into the Lower Greensand by the County Council for the use of the School has been made available to the public.

Of the remaining eleven parishes, nine have wells in the Chalk of varying depths, and two have wells in the boulder clay. Nothing was done during the year regarding the supply to Fordham, to which the attention of the District Council was directed. Apart from a public well in the chalk, the parish is dependent upon private wells which vary in depth, but which are in the great majority of cases shallow and liable to surface contamination. A few-houses also are dependent upon a stream, and an improved public supply is certainly required.

Swavesey.—This District stands mainly on the Jurassic Clays with a small outcrop of Lower Greensand at Lolworth.

The East Hunts Water Company supply Swavesey and some houses in Fen Drayton parish from their well in the Lower Greensand. Lolworth is supplied from a private well in this stratum.

The following table shows the results of analysis of 86 samples of water submitted to the County Analyst, Mr. West Knights, during the year by the various Local Authorities :—

	<i>Fit for Drinking Purposes.</i>		<i>Unfit.</i>	<i>Total.</i>	
Linton Rural	6	..	6	..	12
Melbourn Rural	—	..	2	..	2
Newmarket Rural	24	..	19	..	43
Swavesey Rural	—	..	1	..	1
Education Committee ..	1	..	1	..	2
Private	15	..	11	..	26
	—		—		—
	46		40		86
	—		—		—

From the foregoing account it will be seen that there are mained supplies either provided by the Local Authorities or by private companies or individuals to Cambridge Borough and 25 rural parishes. Of the remaining 105 parishes many receive a supply of good quality from public or private wells, while others are dependent upon shallow wells, which are liable to surface contamination, and some few are entirely dependent upon ponds and similar sources. Schemes have recently been completed for the supply of Cheveley, Saxon Street and Wood Ditton in the Newmarket Rural District, and the inclusion of Ashley and Kirtling are under consideration. The supply of Caxton parish has now been resolved upon, as also of Soham, but no proposals are yet made as regards Fordham. Schemes for Croxton, Graveley, Eltisley and the two Papworths in Caxton and Arrington Rural District are still under consideration.

NEWMARKET RURAL DISTRICT COUNCIL.

Water Supply.

Parish.	Area in Acres.	Population in 1911.	Est. No. of Houses.	Water Supply.
Ashley	2225	561	131	Public deep well from chalk : and other wells.
Burrough Green	2271	444	92	Wells and springs in boulder clay.
Bottisham	2851	704	169	Public pump supplied from deep bored tube well, water from lower greensand; and other wells in chalk and lower greensand.
Brinkley	1303	246	58	Public well and pump, water from gravel spring in boulder clay.
Burwell	7417	2144	541	Five public bored wells, water in four from chalk and one from lower greensand.
Cheveley	2557	724	162	Piped service from chalk well, 400 feet; also deep wells in chalk shallow wells and spring.
Chippenham	4284	513	123	Bored well and pump. Other wells chiefly in chalk.

Newmarket Rural District Council—*continued.*

Parish.	Area in Acres.	Population in 1911.	Est. No. of Houses.	Water Supply.
Dullingham	3386	765	187	Three public wells in chalk ; also other wells, springs, ponds.
Fordham	4195	1410	365	Wells in chalk ; also from stream occasionally.
Isleham	5207	1643	396	Wells in chalk, and River Lark.
Kennett	1425	182	44	Wells in gravel and chalk.
Kirtling	3123	627	143	Deep wells in chalk ; also shallow wells.
Landwade	126	22	4	Wells in chalk.
Lode	3117	679	157	River and shallow wells. New greensand boring at School, also supplies village.
Snailwell	2032	207	46	Wells and spring in chalk.
Soham	12946	4682	1118	Eight public bored wells in lower greensand and one in chalk ; also many private wells.

Newmarket Rural District Council—*continued*.

Parish.	Area in Acres.	Population in 1911.	Est. No. of Houses.	Water Supply.
Stetchworth	2889	776	176	PIPED SERVICE, Rural District Council. Also 5 deep wells in chalk.
Swaffham Bulbeck	4092	714	179	Three public pumps supplied from tube wells, two bored into chalk, and one into lower greensand.
Swaffham Prior	5563	934	241	Numerous wells in chalk
Westley	1148	208	47	Deep well in chalk.
Wicken	3934	682	189	Four public pumps supplied from deep wells bored into lower greensand.
Woodditton	4768	997	220	Public piped service from chalk well 400 feet. Also two public pumps, one supplied from deep well in chalk, and one from shallow well. Newmarket Waterworks Co. supply a few houses.

LINTON RURAL DISTRICT COUNCIL.

Water Supply.

Parish.	Area in Acres.	Population in 1911.	Est. No. of Houses.	Water Supply.
Abington, Great	1586	255	66	Well and pump used by public; other wells in chalk, 20 to 240 feet.
Abington, Little	1306	247	61	Wells in chalk, 15 to 122 feet.
Babraham	2383	291	63	Public pump supplied by well in chalk; and other wells in chalk, 20 to 60 feet.
Balsham	4549	804	199	Three public deep wells in chalk 160 to 182 feet; and one public shallow well in gravel.
Bartlow	377	90	23	Wells in chalk, 10 to 60 feet
Carlton	2413	279	67	Public pump supplied from spring; also ponds and other wells.
Castle Camps	3181	670	172	Public well, 120 feet, with water elevator, also ponds and springs and other wells.
Duxford	3233	764	195	Wells in chalk, 7 to 160 feet
Hildersham	1507	201	46	Wells in chalk and gravel, 7 to 28 feet.

Linton Rural District Council—*continued.*

Parish.	Area in Acres.	Population in 1911.	Est. No. of Houses.	Water Supply.
Hinxton	1558	325	88	Public pump supplied by tube well bored into chalk, 148 feet; and dug wells in chalk, 11 to 70 feet.
Horseheath	1919	411	94	Four public pumps, three supplied by filtered pond water, and one from a spring. Private dug well in chalk, 115 feet.
Ickleton	2695	637	157	Public pump supplied by well in chalk, and other wells in chalk or gravel, 7 to 195 feet. One private tubed, in chalk, 232 feet
Linton	3806	1501	378	Three public pumps supplied by tube wells bored into chalk, 120 feet; and other wells in chalk, 10 to 146 feet.
Pampisford	1605	243	68	Five public pumps supplied by tube wells bored into chalk, 120 feet; and other wells in chalk.

Linton Rural District Council—*continued.*

Parish.	Area in Acres.	Population in 1911.	Est. No. of Houses.	Water Supply.
Sawston	1884	1578	409	Seven public pumps supplied by tube wells bored into chalk, 120 feet ; and other wells.
Shudy Camps	2361	287	67	Deep wells dug through boulder clay into chalk, 134 to 187 feet ; and ponds.
Weston Colville	3234	458	109	Public pump supplied from well in chalk, 105 ft., and one spring ; also other wells, ponds, and rain water tanks.
West Wickham	2929	336	87	Public wheel-pump supplied by deep well dug through boulder clay into chalk, 129 ft. ; also spring with public pump, and ponds.
West Wratting	3541	470	120	Public wheel-pump supplied by deep well dug through boulder clay into chalk, 154 ft. ; and ponds.
Whittlesford	1969	720	191	Three public pumps supplied by tube wells bored into chalk, 80 to 100 feet ; and other wells in chalk, 15 to 162 feet.

HOUSING OF THE WORKING CLASSES.

The following table shews the action taken by the Local Sanitary Authorities under the Housing (Inspection of District) Regulations.

			Houses Inspected.	Houses unfit for habitation.	Houses repre- sented unfit.
Cambridge Urban	..	..	1321	34	2
Caxton and Arrington Rural..	..	..	220	—	43
Chesterton Rural	..	..	65	41	10
Linton Rural	..	..	321	11	3
Melbourn Rural	..	..	121	9	9
Newmarket Rural	..	..	602	23	9
Swavesey Rural	..	..	62	—	—
			—	—	—
Total for 1913	..	..	2712	1	76
			—	—	—
Total for 1912	..	..	4741	164	68

			Closing Orders made.	Remedied without Closing Orders.	Remedied after Closing Order.
Cambridge Urban	..	..	2	262	1
Caxton and Arrington Rural..	..	..	—	2	—
Chesterton Rural	..	..	10	20	3
Linton Rural	..	..	2	25	2
Melbourn Rural	..	..	9	21	2
Newmarket Rural	..	..	2	5	1
Swavesey Rural	..	..	—	—	—
			—	—	—
Total for 1913	..	..	25	335	9
			—	—	—
Total for 1912	..	..	37	114	23

It will be observed that house-to-house inspection has been well maintained in Cambridge Borough and in the Rural Districts of Caxton and Arrington, Linton and Newmarket. On the other hand there has been a reduction in the number of inspections made in the Chesterton, Melbourn and Swavesey Rural Districts, especially Chesterton, where inspections fell from 1631 in 1912 to 65 in 1913. In this large district, where it is not practicable for one Sanitary Inspector to undertake these duties unassisted, the services of an additional officer were obtained to carry out housing inspection. but the prevalence of infectious disease is said to have interfered with the work. The Housing Regulations contemplate that such a survey should be continuous and systematic. Although much valuable work has doubtless been done as regards repairing and putting houses into habitable condition, much rural cottage property is so old that the repairs executed cannot be of very lasting benefit, and early re-inspection is necessary to ensure habitability. In order to maintain a satisfactory standard of repair, inspection of the working class dwellings in the district should continue to be general and systematic, though perhaps some relaxation from the initial survey may be admissible. It is clearly necessary that special attention should be given to the worst property, which will require more constant supervision than the average class of dwelling.

It should be noted that in Swavesey Rural District, several houses are said to have been under observation which would have been represented as unfit for habitation had they not been burnt down during the fire of 1913. One unoccupied house at Fen Drayton, which is regarded as unfit for occupation, is not included in the table of housing inspections.

Cambridge Borough.—Dr. Laird gives details of a census taken by the Sanitary Inspectors of all occupied and unoccupied dwellings, distinguishing between houses above and below a rental of £16 per annum, *i.e.*, about 6s. per week. Only 30 houses (or 0.21 per cent.) let at a lower weekly rental than 6s. were found to be unoccupied, against 140 (0.98 per cent.) at higher rentals, and Dr. Laird draws the inference that “if the Corporation were to build houses of the type usually let at about 5s. to 6s. per week, no objection could be raised on the ground of competition with private builders.” It seems clear that private effort does not meet the requirements of the community for property of this class.

The 18 houses erected by the Corporation and completed during the year have not been fully let. These houses were regarded as experimental, 12 of the 18 being single-roomed tenements for old people, let at rentals of 2s. and 2s 3d. The experience gained will no doubt be of value in future housing schemes, and may be immediately applied in the present proposal for the erection of houses on a site in Victoria Road.

Plans for 146 new houses were passed during 1913.

Caxton and Arrington Rural.—Dr. Poyntz Wright reproduces some observations from his 1912 report, the essential points being :—

There are no back-to-back houses.

There are usually two living rooms and two bedrooms, seldom three ; there is a great need for houses with three bedrooms, and overcrowding is inevitable.

The bedrooms are seldom seven feet high, whereas eight feet is regarded as the minimum height permissible.

Many houses would be certified as unsuited for human habitation if other accommodation was available. Only three new houses were erected in 1913. (The number of new houses erected during the five years 1909 to 1913 averaged only five per annum.)

Dr. Poyntz Wright goes on to say :—" Your Council are at the present time considering a scheme for the erection of good labourers' cottages in certain portions of the District, each cottage to have three bedrooms, and are making enquiries as to what has been done in other rural districts. It is quite certain that good sanitary cottages are required in certain parts of the district." Enquiries have been made from the Parish Councils as to the local housing requirements, and a scheme is on foot for the erection by the District Council of cottages at Gamlingay.

Chesterton Rural.—Dr. Anningson repeats some observations from his previous annual report tending to shew that in villages where the principal increases of population have occurred sufficient houses have been built to accommodate the increased population. In twenty years overcrowding would appear to have been reduced nearly fifty per cent ; most of the overcrowding is met with in the three-roomed tenements. The apparent increase in three-roomed houses is attributed to altered methods of census record, sculleries not now being included as rooms.

Dr. Anningson indicates Histon and Coton as being in need of new houses. The total number of new houses erected in the Rural District during the year was 53, principally in

the larger parishes. Of eight new houses at Willingham, five were erected by the Water Company ; the District Council do not appear to have proceeded further with their proposal in 1911 to purchase land for the provision of working class dwellings in this parish.

Reference was made in last year's report to a Local Government Board enquiry in connection with the proposed provision of 12 working class dwellings on a site at Church Hill, Cottenham. The scheme was referred back. " This site has since been abandoned as unsuitable, and the offer of a more suitable site at a low price has been provisionally accepted."

Dr. Anningson notes that as changes of tenancy occur comparatively seldom, Section 15 of the Housing, Town Planning, &c.. Act is not of great practical use in ensuring that houses are kept in proper repair by landlords, but that reasonable requirements are as a rule complied with. The difficulty arises in the case of small owners whose means are insufficient to carry out the necessary improvements.

Linton Rural.—Dr. Armistead gives particulars of 1072 houses inspected under the Housing Regulations up to the present. Of these 473 contained four rooms, 269 five or more, and 330 less than four rooms. As many as 807 houses have less than three bedrooms.

" With reference to the proposal of the Board of Agriculture to spend money in providing cottages for agricultural labourers, cottages are required in several parishes, particularly in Balsham, to replace existing cottages which are on account of defective accommodation or construction barely fit for habitation. The rent which could be paid for

cottages with three bedrooms and about 30 or 40 rods of garden ground is about 2s. to 3s. a week."

Seventeen new houses were erected during the year, of which ten were built by the Rural District Council, six at Linton and four at Whittlesford. This makes a total of 16 cottages constructed by the Council at Linton ; they are built in pairs and each has three bedrooms. The cost of erection of the first 10, which have parlour, kitchen and scullery, was £1455, and of the last six, which have a large living room and scullery, was £846, total £2,301, and incidental expenses, £155. The annual income from the 16 cottages is £114 6s., and the annual expenditure in respect of loan charges, £125.

The row of four houses at Whittlesford was built on land belonging to the parish ; the houses contain a large living room, scullery and three bedrooms. The cost of erection was £520, and incidental expenses £28. The annual income from the lettings (3s. per week) is £31 4s., and the annual expenditure in respect of loan charges is £22.

Melbourn Rural.—Dr. Anningson reports that more houses are required at Barrington, Shepreth, Bassingbourn, Steeple Morden, Thriplow, Great and Little Chishall, and especially at Fowlmere, Melbourn and Meldreth, where the cottages are of an unsatisfactory character.

From a recent inspection of almost all the parishes in this district made in the company of an Inspector of the Local Government Board and of officials of the District Council I am able personally to corroborate Dr. Anningson's opinion as to the need for houses for the working classes in the great majority of the parishes. A large proportion of the houses in this district are of the lath and plaster type,

with thatched roof ; the floors of the living rooms are often of brick laid directly on the ground, and being below the level of the surrounding ground both floors and walls are liable to become damp. Many of these houses are very old, and their occupation is only permissible because no better accommodation is available.

The housing problem is of greater urgency in some parishes than in others, and I would especially mention Melbourn and Meldreth. At Melbourn the housing question has now been before the District Council periodically for several years, but no decision has yet been arrived at. In this parish and at Meldreth, not only is there a shortage of cottages but the existing accommodation is in many cases extremely inadequate, the very high proportion of cottages with only one or two bedrooms being very striking.

Newmarket Rural.—Dr. Armistead again draws attention to the great need for cottages with three bedrooms, as 75 per cent. of the 2,248 houses inspected under the Housing Regulations had not more than two bedrooms.

Special reference is made to Isleham among parishes where additional cottages are required to replace property which is barely fit for human habitation. The rent which could be paid varies from 2s. to 4s. a week. The scheme formulated by the District Council for building eight five-roomed cottages in the parish has not been proceeded with, the arrangements with the Parish Council for a site having fallen through and no other suitable site having yet been obtained.

Thirty-six new houses were erected in the District during the year.

Swavesey Rural.—Dr. Anningson advises that six new houses be built in Over and Swavesey each year until the demand is supplied, houses with three bedrooms being in request.

Overcrowding.—The following table is compiled from tables constructed by the Registrar General, which show the proportion of the population in private families living in tenements with more than two occupants per room. A house whose occupants exceed an average of two persons per room is regarded by the Registrar General as overcrowded. (A kitchen is regarded as a room, but not a scullery.)

OVERCROWDING. TABLE I.

	Percentage of private population.	No of private families.	No of persons.
England and Wales	9.1		
Administrative Counties	8.9		
County Boroughs.. ..	9.4		
Urban Districts (including London and County Boroughs) ..	9.8		
Urban Districts (excluding London and County Boroughs) ..	7.4		
Rural Districts	6.5		
Cambridge Administrative County	4.0	596	5037
Total Urban	2.1	119	1027
Total Rural	5.3	477	4010
Cambridge Borough	2.3	101	881
Chesterton Urban	1.3	18	146
Caxton and Arrington Rural ..	4.7	40	361
Chesterton Rural	4.2	133	1112
Linton Rural	4.3	52	454
Melbourn Rural.. ..	4.5	49	381
Newmarket Rural	8.0	188	1574
Swavesey Rural.. ..	5.0	15	128

As each tenement is occupied by one private family the figures in the second column, which indicate the number of families living under conditions of overcrowding, also shew the number of overcrowded tenements.

The figures relate to the areas as they existed at the Census of 1911, since which date Cambridge Borough has absorbed Chesterton Urban District and the urban portion of Chesterton Rural District. For comparative purposes, therefore, the figures opposite "Total Urban" should be taken as approximately representing conditions in Cambridge Borough as constituted at the present date; they are not strictly accurate, as the population absorbed from Chesterton Rural District is not included.

OVERCROWDING. TABLE II.

Percentage of private population living in houses with more than two persons per room in Cambridgeshire and neighbouring Counties.

				Administrative County.	Total Urban.	Total Rural.
Bedfordshire	..	..	..	3.0	2.2	4.2
Ely, Isle of..	..	..	..	3.7	4.2	3.1
Essex (excluding County Boroughs)				4.7	5.0	4.1
Hertfordshire	..	..	..	3.6	3.3	4.2
Huntingdonshire	..	..	..	3.6	4.0	3.3
Suffolk, West	..	..	..	5.6	4.2	6.4
Cambridgeshire	..	..	..	4.0	2.1	5.3

The outstanding features of these tables are as follows :—

1. Taking the County as a whole, Cambs. would appear to occupy a very favourable position, having 4 per cent. of the private population in overcrowded houses as compared

with an average of 8.9 per cent. for Administrative Counties generally. But against this must be put the fact that this County contains no large industrial centres which raise the average of overcrowding in manufacturing and mining counties. A comparison with the six adjoining counties, which are of a similar character, shews that there are only two which are more overcrowded against four which are less.

2. The total urban area, *i.e.*, the extended area of the Borough of Cambridge, has a proportion of overcrowded population which is very low compared with urban districts in the country generally, and very appreciably lower than that of similar areas in adjoining Counties (except Bedfordshire, which is only slightly higher).

3. The total rural area in Cambridgeshire has a lower proportion of overcrowded population than the average for rural areas in England and Wales, *viz.*, 5.3 against 6.5 per cent. Compared with adjoining Counties of a similar character, however, only one, *viz.*, West Suffolk, shews a higher percentage of overcrowding in rural districts.

4. The percentage of overcrowded population in individual rural districts in this County varies from 4.2 to 5, except in Newmarket Rural, where overcrowding reaches 8 per cent.

5. If the figures in the tables may be accepted as a basis of estimation of the number of new houses required, it would appear (a) that 4 per cent. of the private population of the County require rehousing, 2.1 per cent in the urban area and 5.3 per cent. in the rural districts, and (b) that approximately 600 houses are required, 120 in Cambridge Borough, and about 480 in the rural districts. To these require to be added

houses to replace those so structurally defective that they cannot be rendered fit for human habitation.

General Statement.—A perusal of the foregoing paragraphs clearly shows that there is a consensus of opinion among the Medical Officers of Health in the County as to the need for increased housing accommodation for the working classes, and especially in the rural districts. Not only is there an actual shortage of houses, leading to overcrowding, but there must also be taken into account the fact that the condition of many cottages is so indifferent that they are only occupied because no other accommodation is available. Defects commonly observed in the older class of cottage property are the small size of the rooms, floors of living rooms below the ground level causing dampness of floors and walls, living rooms 6 feet or less from floor to ceiling, windows not made to open, no back door or large window, and therefore no through ventilation. Bedrooms are too few in number, largely or wholly in the roof, badly lighted and ventilated and with limited floor and air space. Property of this type is obviously not reasonably fit for human habitation, and requires to be taken into consideration when considering the housing requirements of a district. I give the following examples from personal observation.

1. Cottage occupied by man, wife and 7 children (the eldest aged 16)—living room below ground level—two bedrooms almost wholly in the roof, with windows too small for effective ventilation.

2. Cottage occupied by man, wife and six children—one living room and scullery, window not made to open—two bedrooms.

3. Cottage occupied by man, wife and four children—one small living room, window not made to open—stair dangerous—one bedroom, entirely in the roof, dark, floor entirely occupied by three beds. House said to be damp in the winter.

4. Cottage occupied by man, wife and five children (ages of children from 11 to 27)—two living rooms, one very badly lighted with very low ceiling, water stands on brick floor in winter—two stuffy bedrooms wholly in the roof, one of two windows at floor level.

Examples of this kind could, unfortunately, be multiplied without any difficulty, but these will suffice to emphasise two points which specially concern the County Council. The first is that the Council are spending public money in rectifying, through their school medical system, diseases in children which are caused by the insanitary conditions of their homes, as exemplified above, and which will continue to be a necessary public charge until healthy homes have been provided. The second point is that the housing question is at the root of the pulmonary tuberculosis problem, as the present unsatisfactory conditions not only predispose to infection by inducing a low standard of health in individuals, but afford every facility for the spread of infection from one to another. In many cases it is practically a hopeless problem to endeavour to deal with tuberculous persons in their homes, and until better accommodation has been provided the eradication of tuberculosis cannot be looked for.

I am glad to note from the reports of the Medical Officers of Health that in most of the Rural Districts the housing question is receiving attention and a start is being made in the erection of houses by the Local Authorities. I would

repeat, from previous reports, a statement as to the principal powers of the County Council in connection with housing.

The County Council may take action upon complaint made by the Parish Council, Parish Meeting or four inhabitant householders, and if satisfied of default of the Rural District Council may transfer to themselves the powers of that body for provision of working-class dwellings.

The County Council may apply to the Local Government Board, on grounds of expediency, for the transfer to themselves of the powers of a Rural District Council.

The County Council may complain regarding a defaulting Local Sanitary Authority to the Local Government Board, who may direct the County Council (consenting) to carry out necessary works.

The County Council may initiate or assist financially in the formation of Co-operative Building Societies.

A memorandum issued in January, 1914, by the County Councils Association urges on County Authorities the policy of "using to the full their powers of providing houses for special classes of the people, *e.g.*, small holders, teachers, police and roadmen The power of Standing Joint Committees to provide houses for the police is fully understood and widely exercised." As regards roadmen, although there appears to be no specific statutory power for building houses, no obstacle has been placed by the Local Government Board in the way of Councils which have made such provision for their employees.

Up to the present, 18 new houses have been provided by the Council under the small Holdings Act, 14 members of the police force are housed in connection with police stations, and 32 head-teachers of Council schools have houses provided, of which 6 were erected by the Council. No employees of the Roads and Bridges Committee are housed by the Council.

The Council are at present giving consideration to this question as a means of relieving pressure in those villages where insufficiency of accommodation is known to exist. The matter has been the subject of report which has been referred to the Committees concerned.

SALE OF FOOD AND DRUGS ACT.

In Cambridge Borough, the administration of the Food and Drugs Acts, for the detection of adulteration, is in the hands of the Borough Authority ; in the rural districts it is in the hands of the County Police. The Local Government Board require the County Medical Officer to include this subject in his annual report.

County.—The total number of samples taken by the County Police for analysis was 167, all of which were formal, equivalent to 2.3 samples per 1,000 of the population. They included 34 of fresh milk, 3 of skimmed milk, 42 of butter, 19 of margarine, and 9 of cheese. The remaining samples were lard 12, cocoa 19, tea 3, coffee 1, sugar 5, tapioca 5, rice 5, sago 2, flour 1, baking powder 1, jelly 1, pepper 2, mustard 1, ginger 1, and vinegar 1.

Three samples were certified by the Public Analyst not to be genuine ; the action taken was as follows :

1. Milk adulterated with 15 per cent. of added water. Proceedings were taken against the vendor, who pleaded that accidental leakage in the milk cooler had caused adulteration. He was ordered to pay costs, including the Analyst's fee.

2. Milk deficient in milk fat 6 per cent. Vendor convicted and fined 10s. inclusive of costs.

3. Sago, consisted entirely of tapioca. Vendor cautioned, no proceedings taken.

Cambridge Borough.—Samples taken numbered 120, in the proportion of 2.1 per 1,000 of the population. With the exception of 25 of milk and 3 of butter, the samples were taken without the formalities of the Sale of Food and Drugs Acts. The Public Analyst reported 93 to be genuine and 27 not genuine. Total samples taken included milk 51 (formal 35, informal 16), cream 12, butter 6 (3 formal, 3 informal), and margarine 3. The remaining 48 samples included 11 of spirits. The 27 samples reported not to be genuine comprised milk 14 (formal 11, informal 3), and, of informal samples, cream and whisky 2 each, margarine 3, and one each of butter, mineral water, rice, sago, rum and gin.

Three vendors (of five samples) were prosecuted and fined for selling milk not up to standard. Three prosecutions were for added water, and two for added water and deficiency in fat ; there were four convictions. In sixteen instances also where informal samples were found to be adulterated the vendors were warned. Other warnings were given for offences

other than adulteration, viz., no name and address on cart (1), breach of Margarine Act 1887 (3), breach of Milk and Cream Regulations (3).

Use of Preservatives in Milk and Cream.—The Public Health (Milk and Cream) Regulations came into force on January 1st, 1913. They prohibit the addition of any preservative to milk, or to cream which contains less than 35 per cent. by weight of milk fat, and of any thickening matter to cream or preserved cream. They permit the addition of borax, boric acid or hydrogen peroxide to cream containing 35 per cent. of milk fat, subject to a declaration on a label in the form prescribed.

In Cambridge Borough, of the 51 samples of milk examined for preservatives 2 contained boric acid, and of 5 samples of cream two contained the same preservative. There were three offences in connection with labelling, for which the vendors were cautioned.

As regards the County area, the reports of the Public Analyst indicate that 18 out of 42 samples of butter taken under the Sale of Food and Drugs Acts contained quantities of boric acid varying from 0.10 to 0.42 per cent., and that the same preservative was present in 16 of 19 samples of margarine in proportions varying from 0.11 to 0.33 per cent. No other preservatives were detected in any food samples examined,

No special action was taken under the Milk and Cream Regulations during 1913, but the following report made to the Local Government Board in 1914 indicates the present position.

“ The administration of the Sale of Food and Drugs Acts is in the hands of the police, and the Chief Constable has now been instructed to take samples under the Milk and Cream Regulations, and to carry out the other requirements of the Regulations.

“ The County Medical Officer of Health is to receive copies of analyses from the Public Analyst and to advise thereon where necessary, and also to advise the Chief Constable from time to time as to methods of sampling. He has also been instructed to report annually to the Board on the administration of the Regulations.

“ In reply to an enquiry as to examination for preservatives of samples taken under the Sale of Food and Drugs Acts the Public Analyst informs me that ‘ all sample sof food that are likely to contain preservatives are examined for them, especially milk and cream, which cannot be certified as genuine unless preservatives are absent.’ ”

UNSOUND FOOD.

Cambridge Borough.—Dr. Laird notes that much assistance has been given by the members of the Butchers’ Insurance Society in connection with the inspection of any doubtful carcasses.

Unsound food condemned in the Borough comprised beef 456 stone, pork 315 stone, veal 22 stone ; other foods condemned were mainly fish. Two seizures and prosecutions are recorded, with one conviction.

Caxton and Arrington Rural.—"There has been no case of exposure of unsound meat for sale. At the same time I would point out that there is no qualified Inspector for meat in the district, but I certainly think there should be."

Chesterton Rural.—"The meat sold by the local butchers is generally of very good quality, but many of the villagers are unable to afford to buy their meat locally and journey to the town, where foreign and other meat at a lower price is obtainable. Comparatively little tinned food or shop eggs are consumed in the rural district, as there is a prejudice against this class of food." No case of food poisoning was reported.

Swavesey Rural.—The Sanitary Inspector, who is also a Veterinary Surgeon, states that he has made periodical inspections of carcasses, and that there has been no seizure of meat.

In Linton and Newmarket Rural Districts Dr. Armistead states that there has been no seizure of carcasses for tuberculosis, and there is no special reference to the subject in the report on *Melbourn Rural District*.

In Cambridge Borough two Sanitary Inspectors hold the meat certificate of the Royal Sanitary Institute, and in Swavesey Rural District the Sanitary Inspector is a veterinary surgeon. In the remaining rural districts the Sanitary Inspectors have no special qualification for the inspection of meat and other foods.

Inspection of meat for the detection of unsoundness and disease is a matter of some difficulty in rural areas, where beasts are slaughtered privately and the inspector has to depend upon chance for arriving on the scene at the right

time. In some areas a friendly arrangement is arrived at, the butcher notifying the Inspector of the date and time of slaughtering. Special qualification is also not always possessed by the Inspector. It is possible that machinery might in future be provided by the exercise of the powers conferred upon Local Authorities by section 7 of the Milk and Dairies Act of 1914 for the appointment of Veterinary Inspectors, the services of any officers so appointed being also retained for meat inspection.

MILK SUPPLY.

General Administration.—The following paragraphs summarise the reports of the Medical Officers of Health as regards the production, distribution, and sale of milk.

Cambridge Borough.—There are 26 cowkeepers (who are also milk vendors), 50 dairymen and 58 milk purveyors. There are 37 registered cowsheds, to which 197 visits of inspection were paid, revealing 27 defects. Dairies and milkshops number 58, in which 10 defects were noted during 254 visits of inspection.

Caxton and Arrington Rural.—"There are nine registered licensed cowsheds and dairies in the district. They are inspected regularly once a quarter, and at times oftener."

Chesterton Rural.—There are 76 cowkeepers on the register, "also two purveyors and three dealers." "Many of the cows are kept in open sheds, and most of the others are only kept in sheds in severe weather." Copies of the regulations in force and of placards of advice to milkers are supplied to cowkeepers.

The number of inspections made does not appear. Dr. Anningson's report records cleansing and whitewashing of premises, improvement of water supply and the steps taken in one instance to prevent the spread of infection from a cowkeeper's premises.

Linton Rural.—There are twelve registered cowkeepers and one registered milkshop. Two dealers send milk to London and one to Cambridge. Inspections of cowsheds numbered 45, and of dairies and milkshops 46. Regulations are in force. "There was no instance during the year of any disease attributed to milk."

Melbourn Rural.—Dairies and cowsheds are reported to have been periodically inspected, but the number of these premises is not given, and the number of inspections cannot be stated as it is included in a general total of inspections of cowsheds, slaughterhouses, etc.

Newmarket Rural.—There are 19 registered cowkeepers in the district, of whom eight send milk to London, five to Newmarket and one to Cambridge. The number of inspections of cowsheds was 54 and of dairies 17. "The general condition of some of the cowsheds is fairly good, others are not always satisfactory."

Swavesey Rural.—Inspection of milk premises is said to have been carried out, but the number of such premises and of inspections made is not recorded. The Sanitary Inspector states that many cowsheds are having attention, and are very much improved. Leaflets on the construction of cowsheds are being distributed.

Tuberculous Milk.—In Cambridge Borough 33 samples were examined for tubercle bacilli with a negative result in all cases. Samples are not stated to have been examined in the Rural Districts, but 5 were taken by the County Council's Veterinary Inspectors under the Tuberculosis Order of 1913, in 2 of which the tubercle bacillus was detected.

One visit was paid during 1913 by the London County Council's Veterinary Inspector owing to suspicion of tuberculosis being attached to milk exported to London from a farm in the Caxton and Arrington District. Samples of milk were taken from one cow with a suspicious condition of the udder, but as nothing further was heard it is presumed that tubercle bacilli were not found in the milk. In his report on this district, Dr. Poyntz Wright again strongly emphasises the importance of periodical and systematic inspection of all dairy cows by a qualified veterinary surgeon, and includes in his recommendation the examination of those engaged in handling the milk as well as of the cattle. He speaks strongly also in favour of boiling of the daily milk supply before use. "Only when it is certain that milk comes from a perfectly healthy cow, milked under complete cleanliness, and with hygienic transmission subsequently, can it be said that there is no need for it to be boiled."

In the absence of more detailed information no very accurate opinion can be expressed as to the sufficiency of the measures taken for the control of the milk supply within the rural area, but as far as can be judged the frequency of inspection is, generally speaking, insufficient to secure adequate control and supervision in scattered rural areas. In some of the larger districts it is difficult to see how this can be otherwise, with a limited staff which is usually available in rural areas taken as a whole. It is generally admitted

that throughout the country more adequate arrangements and more active administration are needed in rural districts and in the smaller urban areas if a supply of milk free from contamination by dirt and disease is to be obtained for human consumption. The Milk and Dairies Bill* now before Parliament empowers the Local Government Board to make regulations, among others, for the registration of dairies, the inspection of dairies and employees, and for the prevention of sale for human consumption of infected, contaminated, or dirty milk. The embargo to be put on the sale of dirty milk is a new and very desirable feature.

It is also proposed in this Bill to introduce the County Authority into the machinery, the Local Government Board being empowered to transfer to the County Council the powers of a District Council where the latter body has failed to carry out any of its duties in connection with the milk supply. Also, apart from default, on suspicion that tuberculosis is caused, or likely to be caused, by a milk supply, the local Medical Officer of Health is to report to the County Medical Officer of Health, who must cause inspection to be made of the cattle, and, if necessary, of persons handling the milk, and the duty of inspection of cattle and of prohibition of sale of milk will rest with the County Council.

The Tuberculosis Order of 1913, which came into force on May 1st of that year, provides for compulsory notification of cows suffering from tuberculosis of the udder or conditions suggestive of that disease, and of emaciated cattle presumed to be severely infected with tuberculosis. For expert examination of beasts reported within the rural area the County Council divided the County into five districts, for each of which a Veterinary Surgeon was appointed as Inspector.

* Now the Milk and Dairies Act, 1914.

Provision was made for the payment of fees to the Inspectors for microscopical examination and for the application of the tuberculin test for diagnostic purposes.

In the eight months of 1913 during which the Order was in operation 27 beasts were reported. Two beasts which died before inspection could be made can be omitted from consideration. Of 15 cows in milk, 9 proved tubercular, and of 4 dry cows all proved tubercular. Two out of six other beasts proved tubercular. Fifteen out of 25 beasts examined therefore proved to be infected, 12 in an advanced stage, 2 not advanced, and one (slaughtered by the owner) stage not stated. Among the tubercular cows the udder is only stated to have been affected in two instances (one milch cow, one dry). The tubercle bacillus is only stated to have been found in the milk, in two cases of five examined, while of five beasts to which the tuberculin test was applied one gave a positive reaction.

As so large a proportion (80 per cent). of the tuberculous beasts were in an advanced stage of disease the amount of compensation payable was small, viz., £30, with a net liability of £15 5s. od., half of which would be claimed from the Board of Agriculture. In future under the Tuberculosis Order of 1914, which revokes that of 1913, three-quarters of the gross instead of half of the net compensation will be repayable by the Board. The new Order also substitutes the market value of the beast as the basis of compensation, instead of the dual method which gave rise to difficulty in valuation and inequitable compensation under the 1913 Order.

REGULATED PREMISES.

Dairies, Cowsheds and Milkshops.—See Milk Supply.

Common Lodging-Houses.—There are 10 in Cambridge Borough, with a total accommodation for 234 men and women. Four contraventions of the byelaws were detected during 120 visits of inspection. Dr. Laird states that there is no accommodation for women only in Cambridge, and that two of the three houses which receive women are licensed premises, only the poorest or vagrant class being catered for. “There does seem to be a need for some place to which respectable women and girls in need of a night’s lodging could go, and urgent representation has been made to the Health Committee upon the subject, by a Committee of Ladies who have special knowledge of the needs of this particular class of women.” The Health Committee are considering plans for the conversion of a house for this purpose in conjunction with the provision of cottage baths.

The one common lodging-house at Soham in the Newmarket Rural District was inspected during the year. This is the only building of this character in the rural area.

Movable Dwellings.—The 12 canal boats on the Cambridge Borough register received 19 visits of inspection; no action of importance was called for.

In Melbourn Rural District 64 travelling vans were inspected. Model byelaws regarding these structures are in force in the Linton and Newmarket Rural Districts.

Slaughter-houses.—The 33 private premises (17 registered, 16 licensed) in Cambridge Borough have been the subject

of frequent inspection, 1884 visits being paid, at which 14 defects were noted, but the premises were found generally in a satisfactory condition.

In Caxton and Arrington the seven slaughter-houses are said to be under constant inspection, in Chesterton Rural 19 slaughter-houses "periodically inspected" (number of visits not stated), in Melbourn Rural periodically inspected (number of premises and visits not separately stated), in Swavesey Rural 48 visits to 7 premises and in Newmarket Rural 28 visits to 20 slaughter-houses. In Linton Rural, where the slaughter-houses are said to be with one or two exceptions in fairly satisfactory condition, an annual visit appears to have been made to each of these premises.

Speaking generally, in the Rural Districts the number of visits paid to the slaughter-houses is quite insufficient to secure any proper measure of control of the conditions under which beasts are slaughtered for human food, and in certain of the districts, at any rate, it is probably impracticable to exercise proper supervision with the existing staff.

Factories and Workshops.—The number of such premises cannot be stated accurately from the reports. They appear to have been systematically inspected and notices served requiring the remedy of various defects, principally lack of cleanliness, but also concerned with ventilation, sanitary accommodation, drainage, special requirements as to bake-houses, etc. There were no prosecutions and no point of special interest is recorded.

There were five underground bakehouses in use in Cambridge at the end of the year ; none in the rural areas.

Offensive Trades.—The only reference under this heading is to the inspection of knackers' yards, of which there are two in the Newmarket Rural District (Soham and Dullingham) and one in the Linton Rural District (Balsham).

SEWERAGE AND DRAINAGE.

Cambridge Borough.—The sewage from the borough of Cambridge is removed on the partially separate system. This system is graded from the several sewer summits in the Borough and District to the Riverside Pumping Station in Barnwell to the north east of the town, where it is about 25 feet below the river level. Here it is pumped, after screening, through a rising main (duplicated in 1913) about two miles long to the sewage farm in Chesterton Rural District. It is there received into settling tanks and distributed on land underdrained for treatment by intermittent downward filtration. The sewage effluent from the land is discharged by gravitation into the river Cam, a few yards below Baitsbite Locks. The soil, a mixture of loam, sand and gravel, is said to be well adapted for sewage purification. Storm-water was treated at the Pumping Station on bacteria beds, but in accordance with the Royal Commission's Report these have recently been altered into storm-water tanks.

Caxton and Arrington Rural.—Except at Gamlingay there is no sewerage system, drainage being discharged into the dykes and open watercourses at the road sides. "The really good houses in the District have properly constructed cesspools with arrangements for overflow."

Chesterton Rural.—"In the larger villages of Cottenham, Willingham, Waterbeach, Great Shelford and Histon, the

surface-water drains convey house drainage to the water-courses. The question of improvement of the drainage at Cottenham is still under consideration. The drainage system of the populous villages of Willingham, Great Shelford and Histon might with advantage receive consideration." Drainage work has been carried out in some 6 parishes during the year.

A local enquiry was held by the Local Government Board regarding proposals for the sewerage of Ditton Lane, Fen Ditton, which has frequently figured in these reports. Want of a sufficient fall has caused difficulty ; plans have been prepared and the matter is still under consideration.

Linton Rural.—Slopwater is disposed of on garden ground, but at Linton, Whittlesford, Babraham and West Wratting it is received into storm-water drains. At Sawston the sewage is disposed of in settling beds, added to in 1912, and at Castle Camps a pipe sewer discharges its contents in a field outside the village.

Melbourn Rural.—There is no system of sewerage, but in some villages drains discharge into watercourses or cesspools, and in some larger villages into the road drains.

Newmarket Rural.—At Stetchworth the sewer discharges into settling and filtration tanks ; otherwise there are no sewage works in the district. At Soham, Fordham, and Burwell the surface water drains are used as sewers.

Swavesey Rural.—There is no system of sewerage except at Swavesey and Over, where Dr. Anningson observes that treatment of the sewage is required before discharge into watercourses. Extension of the sewer is noted at Over, and some improvements at Fen Drayton and Boxworth.

POLLUTION OF RIVERS AND STREAMS.

Not being a manufacturing county there is little, if any, pollution of streams by trade effluents. Outside the central urban area few parishes have a watercloset system because there are few mained water supplies. Pollution of watercourses is therefore confined to slop-water, which should be treated as sewage, not only on the ground of legal obligation but because it is in fact liable to cause serious nuisance.

Cambridge Borough.—There is no special reference to this subject in the annual report. The effluent from the sewage works is discharged into the Cam, in the Chesterton Rural district.

Caxton and Arrington Rural.—The small watercourses receive sewage from houses in their immediate vicinity.

Chesterton Rural.—Drainage from Grantchester and Trumpington is discharged into the Cam, and surface water drains at Willingham, Cottenham, Waterbeach, Great Shelford and Histon convey slop-water to the watercourses.

Linton Rural.—Slop-water is discharged into the river at Linton.

Melbourn Rural.—Pollution of the Rhee, a tributary of the Cam, is recorded at Steeple and Guilden Morden and at Barrington. Its tributaries are polluted at Litlington, Bassingbourn, and Melbourn, and from Fowlmere intermittently.

Newmarket Rural.—Burwell Lode receives sewage at Burwell, and Soham Lode from Soham and Fordham. Both discharge into the Cam.

Swavesey.—No specific reference is made, but it is to be inferred that there is pollution by untreated sewage from Swavesey and Over.

DISPOSAL OF EXCREMENT AND HOUSE REFUSE.

Excrement Disposal.—Cambridge Borough is on the water-carriage system ; hand flushed closets are being converted to flush by cistern. In the rural districts water-closets are practically confined to better-class houses. The great bulk of the houses are on the conservancy system, and the contents of privy pits or pails are disposed of on gardens or allotments.

In Caxton and Arrington Rural District pails are gradually replacing privy middens, and Dr. Poyntz Wright strongly advocates this conversion. The pail system is said to be largely in vogue in the Chesterton Rural District, but in the larger villages there is often insufficient garden space for disposal of the contents. Dr. Anningson advocates a scavenging system, but observes that the cost stands in the way. In Linton Rural District the proportion of pails to privy pits noted during 1911-13 is 462 to 457. In Newmarket Rural District, which adjoins, conditions noted during the same period were much less satisfactory, there being no fewer than 1474 privy pits to 236 pail closets, or more than 6 to 1. In Melbourn Rural District substitution of pails for pit privies is reported to be actively carried out. Pit privies too near the houses are replaced by pails on a different site. From personal observation in this District, I should say that pit privies still greatly preponderate, and the continuance of the active policy indicated by Dr. Anningson is very necessary. In

Swavesey Rural District "excrement disposal is by privy pits, and in many instances by trough or pail closets." The pits are gradually being replaced by pails. Garden ground is in some cases insufficient for disposal of excreta, and Dr. Anningson suggests the possibility of Swavesey and Over combining for the provision of a sanitary cart for scavenging purposes.

House Refuse.—In Cambridge Borough there is a daily collection of refuse in the centre of the town and from two to four times a week elsewhere. The refuse is burned in a Manlove Alliott's six-cell destructor adjoining the sewage pumping station on the river side.

In the rural districts refuse is disposed of on garden ground or allotments ; there is no system of public scavenging, but at Great and Little Abington, in the Linton Rural District, excreta and house refuse are removed twice weekly by the local landowner. Dr. Poyntz Wright advocates iron ashbins for the Caxton and Arrington District, but notes that the frequent emptying required is made an objection to their adoption. This is, of course, one of the main reasons for introducing the movable ashbin system, as ensuring the retention of as small an amount of refuse as possible for as short a time as practicable in the neighbourhood of dwellings. In Chesterton Rural District the difficulty of disposal of refuse is said not to be acute except in the larger villages, for which a scheme of removal is said to be desirable. In Melbourn Rural District Dr. Anningson says that there is difficulty in getting sufficiently quick removal to allotment when the crops are growing, and points to a system of public scavenging as the remedy. In Swavesey Rural District iron ashbins are being substituted for pits.

The Public Health Committee instructed me to report as to the desirability of devising a scheme of scavenging for some of the larger villages of Chesterton Rural District, a matter which has been repeatedly the subject of reference in Dr. Anningson's annual reports. Enquiries were made at Fulbourn, Cottenham and Willingham. The District Council took very active steps in Fulbourn a few years back, and practically all houses in the parish have pail closets. Some form of movable receptacle is usual in Cottenham and Willingham. Ashpits are seldom provided, and are commonly uncovered and consequently offensive ; complaint is made of nuisance from flies. It is possible for closet contents and household refuse to be disposed of satisfactorily on garden ground attached to a fair proportion of the houses, but this is impracticable in many cases as the space around the houses is very confined. Household refuse is often deposited in a heap, not infrequently near the house, and in some cases closet contents are added to the heap. I would fully endorse Dr. Anningson's recommendation that the question of public scavenging should receive serious consideration.

The view is not infrequently expressed that public scavenging is only urgently necessary in urban districts, but there is much to be said with regard to its importance in rural areas also. As indicated above the conditions frequently approximate to those obtaining in towns owing to the small amount of land attached to the house or, in some cases, the absence of any land at all. Even where the garden space is ample there is often no attempt to dispose of the refuse systematically by trenching and covering with earth. In addition there is the danger of pollution of the water supply, where obtained from private wells, which does not exist in towns. Nuisance and danger to health, especially of children, therefore, undoubtedly arise in rural districts, and adequate

scavenging arrangements are needed where excreta and refuse cannot be properly disposed of by the householders.

In a recent circular the Local Government Board draw attention to the importance of securing the removal of nuisances and other conditions which favour excessive mortality among infants. A reminder is given of "the danger to health caused by accumulations of refuse in the neighbourhood of dwellings. Such accumulations provide breeding grounds for flies and are otherwise open to serious objection. It is essential to the health of a district that there should be arrangements for the efficient and frequent removal of house, stable, and street refuse and of the contents of privies and closets on the conservancy system, and for the disposal of refuse and excrement under sanitary conditions."

NUISANCES.

The Sanitary Inspector is required, by the Order governing his duties, to furnish the Medical Officer of Health with a tabular statement containing information as to the number and nature of inspections made by him during the year, the number of notices served (both statutory and informal), and the result of the service of such notices. Such a statement is included in the report of each Medical Officer in the County, and in some cases a report by the Sanitary Inspector is also attached.

In some reports there is no discrimination between informal and statutory notices, but from the reports in which this distinction is drawn it is to be noted that in a considerable majority of cases it is practicable to obtain the abatement of the nuisance complained of by informal intimation, without it being necessary to resort to the serving of a statutory notice.

From a study of these tables it is clear that a large amount of valuable work is done by the Inspectors in removing conditions prejudicial to the health of the public, though much additional and necessary work could doubtless be accomplished in the larger areas if the Sanitary Inspector were provided with assistance. The routine work of the Inspector is apt to be much interfered with by duties incidental to outbreaks of infectious disease.

Legal proceedings were taken in Cambridge Borough and in Chesterton Rural District. In the latter District proceedings were instituted in two instances :—(1) Premises in such a state as to be a nuisance, conviction obtained, and (2) defective drainage of twelve dwelling-houses belonging to one owner. It was contended that the drain in question was a sewer, and the case was dismissed, defendants' costs not being allowed. In Cambridge Borough 18 summonses were issued and 6 convictions obtained.

ADOPTIVE ACTS AND BYE-LAWS.

Adoptive Acts.—The Infectious Diseases (Prevention) Act, 1890, may be adopted by both urban and rural authorities. Its provisions chiefly relate to the inspection of dairies and cattle outside the district of a Local Authority for the prevention of spread of infectious disease, to the disinfection of premises, bedding and public conveyances, and to the provision of temporary shelter for tenants during house disinfection. The special powers given for detention in hospital of infected persons, for skilled disinfection of houses and their contents by officers of the Local Sanitary Authority, and for the provision of temporary accommodation during such disinfection are of special value in connection with the control of smallpox. The Cambridge Urban and the Chester-

ton and Melbourn Rural Councils have adopted sections of this Act.

The most important provisions of the Public Health Acts (Amendment) Act, 1890, relate to sanitary appliances, structure and site of new buildings, and the sale of food. Part III. has been adopted in the Borough of Cambridge, and so much of this part of the Act as applies to a Rural District has also been adopted in the Chesterton and Linton Rural Districts.

The Public Health Acts (Amendment) Act, 1907, is mainly concerned with the paving of yards, the proper connection of rainwater pipes, the substitution of water-closets for privies, offensive trades, and the spread of infectious diseases in milk (not tuberculous milk). Certain of its provisions have been adopted in the Borough of Cambridge, and for the parishes of Cherryhinton, Grantchester, Trumpington, Fen Ditton and Fulbourn in the Chesterton Rural District.

The Notification of Births Act, 1907, has for some years been in force in the Borough of Cambridge. Its adoption for the whole of the rural districts has for some time been under the consideration of the County Council, and a resolution in favour of this step has recently been submitted to the Local Government Board for confirmation.

Byelaws and Regulations.—Regulations under the Dairies Cowsheds and Milkshops Orders have been made by all the District Councils in the County. Byelaws as to slaughterhouses are in force within the Borough of Cambridge. Tents, vans, sheds and similar structures are regulated by the model byelaws in Linton and Newmarket Rural Districts, and lodgings for pickers of fruit and vegetables by byelaws in

the Chesterton Rural District. Common lodging-houses are controlled by byelaws in the Borough of Cambridge.

Byelaws relating to nuisances, cleansing of footways and pavements, rainwater pipes, and the drainage of buildings are in force in the Borough of Cambridge, as also in Newmarket Rural District (parishes of Woodditton and Cheveley) with respect to cleansing of footways and pavements, removal of house refuse, and the cleansing of earth-closets, privies, ashpits and cesspools, and in the Melbourn Rural District with regard to the disposal of house refuse.

Building byelaws are in operation in Cambridge Urban District, Chesterton Rural (parishes of Cherryhinton, Grantchester, Trumpington and Fen Ditton), and in Newmarket Rural District (parishes of Woodditton and Cheveley). In the other Rural Districts and the other parishes of the Chesterton and Newmarket Rural Districts there is no direct supervision over new buildings, but the Chesterton Council have had under consideration the adoption of Rural Byelaws for the whole district.

With a view to assisting in the prevention of spread of tuberculosis, a bye-law prohibiting spitting in public places was made by the County Council and approved by the Local Government Board during 1912. It is operative outside the Borough of Cambridge.

MIDWIVES ACT.

The County Council are the Local Supervising Authority, and since 1904 have employed the services of Miss A. R. Wilson, a fully trained nurse and certified midwife, as Inspector on the staff of the Public Health Department. The routine visits of inspection paid by the Inspector during the year numbered 210, and in addition some 24 special enquiries were made by the County Medical Officer or the Inspector.

Midwives are supplied by the County Council with copies of the Rules of the Central Midwives Board, notification forms, and printed information regarding puerperal septicaemia and ophthalmia ; also with pamphlets of advice to expectant mothers and as to infant management for the benefit of women engaging their services.

The number of women who notified their intention to practise during successive years was as follows :—

				Trained.	Untrained.	Total.
January 1906	..	..	24	42	66
„ 1907	..	..	24	42	66
„ 1908	..	..	27	35	62
„ 1909	..	..	22	29	51
„ 1910	..	..	23	24	47
„ 1911	..	..	31	22	53
„ 1912	..	..	41	20	61
„ 1913	..	..	32	16	48
„ 1914	..	..	33	14	47

In addition to the 48 women who notified during January 1913, there were 10 who did so at a later date, so that the total number of midwives actually under supervision at some

period or other of the year was 58. These were accounted for in January, 1914, as follows :—

	Trained.	Untrained.	Total.
Notified, January 1914 ..	31	14	45
Left District	7	1	8
Failed to notify	2	2	4
Will not practise.. ..	1	..	1
	—	—	—
	41	17	58
	—	—	—

In addition to the 45 women who practised in 1913 and continued in 1914 there were two fresh notifications from trained women, bringing the total number notifying up to 47 at the commencement of the current year. Of the 33 trained women, 11 were in Cambridge Borough and 22 in the rural area, while the 14 untrained women were in the rural area.

The proportion of trained women to total midwives in January 1914 was 70 per cent. against 66 in January 1913, and 33 in 1906. This proportion may be expected to increase as the nurses now being trained by the County Nursing Association take up their duties for the District Associations. The training in all cases includes instruction for the examination of the Central Midwives Board, whose certificate all nurses appointed are required to hold.

The total number of confinements attended by midwives during 1913, as judged by the entries made in their registers, was 922, of which 83 were stated to have been attended under medical supervision. This latter figure is probably an understatement, as there is no obligation on a midwife to enter cases which she merely attends as a monthly nurse.

Deducting the 83 confinements definitely stated to have been so attended, 839 remain which were attended independently by midwives as compared with 1021 in 1912, a reduction of 18 per cent. Medical assistance was required in 108 of these cases, or 13 per cent. of the whole, the same proportion as in 1912.

The following figures indicate the proportion of total births attended by midwives.

	No. of Births registered.	No. of Midwives' cases.	Percentage of Midwives' cases, 1913.
Cambridge Borough ..	IIII	499	45
Rural Area	I389	340	25
Whole County	2500	839	33

Though these figures may not be absolutely correct they indicate the facts with sufficient accuracy to form a useful basis of comparison of one year with another. In 1912 the proportion of total births in the County attended independently by midwives was 39 per cent., so that a comparison of the two years shews a reduction of 6 per cent in the births thus attended. The reduction of 18 per cent. in the actual number of cases attended by midwives noted in the preceding paragraph is still more striking. This reduction appears to have occurred equally in Cambridge and in the rural area, as the proportion of urban to rural midwives' cases remains the same as in 1912, viz., 59 urban to 41 rural.

A possible explanation may be found in the working of maternity benefit under the National Insurance Act, the monetary grant of 30s. being utilised to secure the attendance of a medical practitioner rather than of a midwife as formerly. This does not necessarily mean that the services of the midwife are dispensed with, as in a number of cases she may also be

engaged in the capacity of nurse. If the effect of maternity benefit is to ensure both medical attendance and skilled nursing a very useful purpose will be served, but this assertion cannot yet be made with any degree of certainty.

The number of notifications received from midwives in accordance with the Rules of the Central Midwives Board was as follows :—

Medical Help advised for mother	..	..	76
" " " " infant	..	..	32
Still births	..	..	9
Death of mother, no doctor attending	..	..	—
Death of infant, no doctor attending	..	..	5
Laying out the dead	..	..	8
			—
Total	..	..	130

The number of notifications of having advised medical help for mother or infant is practically the same as the average for preceding years.

Medical Help for Mother.—The conditions notified as calling for medical assistance were :—Prolonged labour 19, abnormal presentation 16, ruptured perinæum 12, adherent placenta 7, hæmorrhage 7, rise of temperature 3, other conditions 12.

None of the three cases of rise of temperature proved to be due to puerperal sepsis.

There was no case of puerperal septicæmia notified as such, but one fatal case was notified under another heading, and enquiry showed that no breach of the Rules had been

committed. In a further case which came to light the midwife was unregistered and attended solely in the capacity of a nurse.

Medical Help for Infant.—The conditions notified as requiring the attendance of a doctor were:—Prematurity at birth 12, dangerous feebleness at birth 6, inflammation of eyes 9, and other conditions 5.

Nine notifications of inflammation of the eyes of the infant were received and enquiries made into 6 of them. Five proved to be slight, and in the remaining case a history of ophthalmia at previous confinements was given.

The Regulations of the Local Government Board which require notification to the Local Sanitary Authority by doctor or midwife of cases of ophthalmia neonatorum came into force on April 1st, 1914. This contagious disorder, which is a great cause of blindness among infants, is defined in the Regulations as a purulent discharge from the eyes of an infant commencing within 21 days from the date of its birth.

The Rules of the Central Midwives Board require midwives to notify to the Local Supervising Authority, *i.e.*, the County Council, whenever they have advised medical help for any inflammation of the eyes, however slight. This is a precautionary measure, designed to secure treatment in the early stages of an inflammation which might otherwise become purulent and dangerous to sight. It will be seen therefore that the notifications under the Rules of the Central Midwives Board are not an index of the care taken by midwives, as a large proportion are due to slight causes of a non-infective character.

Enquiry is made from the Local Sanitary Authority regarding all cases of ophthalmia notified under the new Regulations, to ensure knowledge of any case with which a midwife may have been concerned but which she may have failed to notify to the County Council also in accordance with the Rules of the Central Midwives Board.

Still Births.—The nine notified still-births correspond to 1 per cent. of the number of labours attended, as compared with 3, 2.5, and 1.7 per cent. for the years 1910-11-12. This steady decline in the proportion of still-births is a very satisfactory feature to record, provided it exactly represents the facts and is not due to failure to notify. Nothing has come to my knowledge to suggest the contrary. There was no special incidence on the practice of any individual midwife.

Death of Infant.—All five notified cases were the subject of enquiry. All occurred in the practices of trained women, and there was no instance of non-compliance with the Rules. At the inquests regarding four of these deaths, verdicts of death from natural causes were returned, and the Coroner satisfied himself regarding the fifth infant without the formality of an inquest. The inquests were attended by the Council's Officers.

Laying out the Dead.—Enquiries made into the eight notified cases revealed no breach of the Rules.

SCHOOLS.

Apart from Cambridge Borough, which is an autonomous area, the medical inspection of public elementary scholars is carried out by the County School Medical Officer and the assistant School Medical Officer, who are also the County Medical Officer of Health and Assistant Medical Officer of Health respectively. Both are wholtime officers of the County Council.

The work carried out in connection with the medical inspection of school children is dealt with in a separate report to the Education Committee, which includes a section on the hygienic condition of school premises. Special reports on the sanitary condition of 21 schools were presented to the Buildings Sub-Committee during the year, eight relating to Provided, and 13 to Non-Provided Schools. The defects reported upon included water-supply 6, closets and urinals 5, defects of drainage 5, improper disposal of excreta and ashes 2, in addition to lighting, ventilation, etc.

The Elementary Education area is a purely rural one, and public water mains are comparatively few in number. There are only 14 schools where the public supply is piped on to the premises. Forty-three others have a supply from a well on the premises of the School or of the Teacher's house adjoining. Others are dependent on village supplies.

As regards offices, the great majority of the Schools are necessarily on the conservancy system. There are more schools with pails than with privy pits. An improved pail system which permits of the drainage of liquid contents to a cesspool, leaving the solid matters in a dry condition in the pail, has been introduced into seven Council schools with satisfactory results.

A special feature has been the treatment of the floors of 16 schools with a dust-allaying preparation. Although there has been some adverse criticism, mainly as regards the darkened appearance of the floors and soiling of articles dropped on the floors, the teachers are unanimous as to the attainment of the object aimed at. Their opinions and my own observations leave me in no doubt as to the greatly increased cleanliness of the schools where the preparation in question has been introduced, and the results are certainly such as to encourage the Committee to extend the method to other schools.

Measures for the prevention of spread of infectious disease include notification by the teachers of sufferers and suspects among their scholars, and their exclusion for periods prescribed by the regulations. Leaflets regarding measles and whooping-cough are supplied for the information of parents, and a measles register will in future be kept in the schools. Outbreaks of infectious disease necessitated 71 visits of inspection and supervision by the medical staff. Diphtheria especially called for supervision, and 524 swabs were taken for bacteriological examination. Infectious disease also called for the closure of 62 schools, the certificate of the School Medical Officer being furnished in each case. In actual practice, school closure is in the hands of the School Medical Staff, in consultation, where necessary, with the local Medical Officers of Health.

METHODS OF DEALING WITH INFECTIOUS DISEASE.

Notifications of infectious disease are sent to the Medical Officers of Health for the Districts and not to the County Medical Officer, who, however, receives weekly, from each local Medical Officer, a return of the number of cases of each disease notified from his district. Details of individual cases are not required to be furnished, except for tuberculosis, but some Medical Officers give information as to the parishes in which cases have occurred, and it would be of great assistance if this were given by all. As School Medical Officer, the County Medical Officer receives much information from notification by Head Teachers, but as the sources of their information are necessarily not always accurate, as full information as possible from all official sources is desirable.

On the receipt of a notification, the usual measures of visitation, enquiry and instruction, isolation and disinfection by the Officers of the Local Sanitary Authorities are carried out. Hospital isolation varies much in degree in the different sanitary districts, as is indicated in the paragraphs dealing with Isolation Hospitals

With a school population of 12,600 children, a good deal of work in connection with the control of infectious diseases in the schools naturally falls to the share of the County Medical Staff, to which reference is made in the section on Schools. These duties are not confined to the school premises, but not infrequently involve the investigation of outbreaks, and necessitate enquiry in the homes of the children. Information so derived is, of course, placed at the disposal of the officers of the Local Sanitary Authorities.

Bacteriological Diagnosis.—Provision is made with this object by all the Local Sanitary Authorities for diphtheria and enteric fever. In Cambridge Borough, including school work, about 5,000 diphtheria swabs appear to have been examined, in Newmarket Rural District 91, and two in Linton Rural District. No figures are available for other districts. Figures are not given for serum examinations for enteric fever, but from Chesterton Rural District cerebro-spinal fluid was submitted for bacteriological examination from two cases of notified poliomyelitis.

Examinations of sputum for the tubercle bacillus is known to be undertaken by the Cambridge Urban and the Melbourn, Linton, and Newmarket District Councils.

The County Education Committee provide bacteriological examination for diphtheria for children attending public elementary schools, and 524 swabs were taken during the year. The County Council have not yet made provision with regard to other infectious diseases. A memorandum of the Local Government Board, recently issued, shews that bacteriological examination is provided by County Councils, (a) nine in laboratories under their own management, (b) six in University laboratories, and (c) one in a private laboratory. Several other County Councils were on the point of starting County laboratories.

The County Council having undertaken a scheme of administration for the control of tuberculosis it is very desirable that every facility for accuracy of diagnosis for the early detection of tuberculosis should be afforded to the Tuberculosis Officer and to the private practitioners in the County area. It is necessary that this important aid to diagnosis should be at his disposal for doubtful cases in atten-

dance at the dispensary and for the assistance of private practitioners who look to him for expert opinion. The expenditure incurred would be small, say 2s. 6d. per specimen, and would be negligible compared with the heavy public charge eventually resulting from failure to recognise tuberculosis in its early stages. The inclusion of this aid to diagnosis in their tuberculosis organisation would be a true economy on the part of the Council, and its need is already felt in the early stages of the working of the dispensary scheme.

Diphtheria Antitoxin is supplied to private practitioners for the poorer inhabitants by all the Sanitary Authorities for curative purposes, and by some as a preventive agent.

Disinfection.—For disinfection of infected houses and their contents, formalin is understood to be the agent used. The spray is used in most districts, while in others formalin is vaporised by means of a lamp ; the latter is the less effective method.

Steam is the only satisfactory disinfectant of bulky articles such as bedding, as aerial disinfectants have little penetrating power. The only districts in which a steam disinfectant is used are Cambridge, Chesterton Rural and Melbourn Rural Districts, and in Melbourn District it appears to be used for hospital purposes only. It is essential that arrangements for steam disinfection should be made by all Sanitary Authorities, either by themselves providing a steam disinfectant, or by an agreement with an adjoining Authority. From my experience of the administration of the Midwives Act I can say that considerable uneasiness is occasioned when a case of puerperal fever occurs in the practice of a midwife living in a district where no steam disinfection is provided by the Local Authority. In these districts also it is impossible to efficiently

disinfect bedding, which has been used, perhaps for many months, by persons suffering from tuberculosis.

Hospital Isolation.—The number of notified cases of scarlet fever and diphtheria fell from 1,227 in 1912, to 728 in 1913, a reduction of 41 per cent. The number of these cases removed to isolation hospitals fell similarly from 726 in 1912 to 458 in 1913, a reduction of 37 per cent. The percentage of cases of these two diseases removed to hospital was somewhat higher in 1913 than in 1912, viz., 63 compared with 59 per cent.

The proportion of cases of scarlet fever and of diphtheria removed to hospital in 1913 was, curiously enough, the same for each disease, viz., 63 per cent. of 526 cases of scarlet fever, and 63 per cent. of 202 cases of diphtheria. In addition, 56 diphtheria "contacts" from the Borough of Cambridge were isolated in that Authority's Infectious Diseases Hospital.

Of the remaining cases of notified infectious disease, four out of 16 cases of enteric fever and one of 9 cases of poliomyelitis are said to have been removed to hospital. Several other cases of the latter disease are, however, known to have been admitted to Addenbrooke's Hospital though not officially returned. Similarly, cases of puerperal sepsis are from time to time admitted to Addenbrooke's Hospital, though their admission may not always be included in the official health returns.

The relative extent to which the various Local Sanitary Authorities isolated their known cases of infectious disease in hospitals is shown in the following statement.

Scarlet Fever.—Newmarket Rural 80, Cambridge Urban 73, and Chesterton Rural 43 per cent. respectively. Also Linton Rural removed one of 25 cases to the Saffron Walden Authority's Hospital, and Melbourn Rural removed one of five cases to their own Isolation Hospital.

Diphtheria.—Cambridge Urban 82, Newmarket Rural 74, and Chesterton Rural 9 per cent., respectively.

Enteric Fever.—Newmarket Rural isolated two of four cases in their Isolation Hospital, and two of four cases in Chesterton Rural were treated in Addenbrooke's Hospital.

Puerperal Fever.—Cambridge Urban three out of three cases.

Poliomyelitis.—Chesterton Rural, one of three cases admitted to Addenbrooke's Hospital (the two others proved to be tuberculosis).

Districts in which cases of infectious disease occurred, none of which were removed to hospital, were :—Scarlet fever, Caxton and Arrington Rural (8) and Swavesey Rural (2) ; diphtheria, Caxton and Arrington Rural (1), Linton Rural (2), and Swavesey Rural (1) ; enteric fever, Cambridge Urban (8) ; puerperal fever, Chesterton Rural (2), Caxton and Arrington (1), and Melbourn Rural (1) ; poliomyelitis, Newmarket Rural (4) and Linton Rural (2) ; cerebro-spinal fever, Chesterton Rural (1).

ISOLATION HOSPITALS.

The County Council assist the Local Sanitary Authorities by contributing annually towards repayment of loans for the erection of isolation hospitals of a permanent character, and towards the cost of maintenance. Such contributions are paid to the Cambridge Urban and the Newmarket and Melbourn Rural Councils. In the case of temporary structures, such as have been provided by the Chesterton and the Caxton and Arrington Rural Authorities, and paid for out of current revenue, a lump sum has been paid towards the cost of erection, but, under the County Council's regulations, no annual maintenance grant can be made. Grants made annually by the Council are conditional on a favourable report being made by the County Medical Officer of Health, and I recommended the continuance of the grants after my last annual inspection.

The maintenance grant is now based on the actual number of beds for patients from districts within this County for which the airspace suffices, and not solely on a population basis. Details of individual hospitals are as follows :—

Cambridge Borough —The isolation hospital, a permanent brick structure, stands on a site of nearly three acres close to the Borough boundary. The total available airspace suffices for 36 patients, and after an enquiry held during 1913, the Local Government Board sanctioned a loan for the erection of two additional pavilions (one on the cellular system) which will accommodate 26 patients. This will bring the total accommodation up to 62 beds, which will provide satisfactorily for an estimated population of 57,096 persons. A small cottage on the present site is used for isolation of diphtheria contacts.

In my last report on this hospital I recommended that a steam disinfecter be provided on the hospital premises, as at present all infected bedding and clothing from the hospital has to be conveyed to the Town disinfecter at the sewage pumping station, an arrangement which, in my opinion, must be a source of serious inconvenience.

The amount of the last annual grant made by the County Council was £358 13s. 4d., made up of £142 13s. 4d. for repayment of loan, and £216 for maintenance of 36 beds at £6 per bed.

For smallpox there are two temporary pavilions, with tents for extension, on an isolated site outside the Borough boundary on its Eastern side.

Chesterton Rural District.—A permanent administrative block of brick, and a temporary pavilion of two wards with airspace adequate for 6, or at the outside 8 beds, stand on an isolated site in the parish of Oakington three or four miles to the north-west of Cambridge. No annual grant is made by the County Council in respect of this temporary hospital, which was paid for out of current revenue, but a lump sum was contributed towards its erection. Only one disease can be dealt with, as patients cannot safely be accommodated in vacant rooms in the administrative block. When I last reported I was of opinion that hot water should be laid on to the wards and that improvement in the method of sewage disposal was desirable.

The accommodation provided at this hospital is not adequate for the population it serves, which is estimated for 1913 at over 23,000.

No provision has been made for small-pox, and I do not regard the proposal to use an adjoining field, if required, as a safe arrangement.

Caxton and Arrington Rural.—No annual grant is made for the temporary structure for six or eight beds which was erected for smallpox, but which has never been used. It stands on an isolated site some two to three miles by road from Caxton. There is no supply of drinking water and no drainage system, and the accommodation for staff, which is provided in the one ward pavilion, is inadequate.

No cases were removed during 1913 to Biggleswade (Beds.) Isolation Hospital, with which institution the District Council have an arrangement.

Melbourn Rural.—This permanent structure, comprising an administrative block and one pavilion of two wards, is situated on the outskirts of Royston (Herts.) and serves a total population exceeding 16,000, of whom over 8,000 belong to Cambs. and an approximately equal number to Herts. The cubic space only suffices for eight beds, and only one disease can be accommodated at once. Melbourn Rural District is entitled to half the accommodation, *i.e.*, four beds, which is not in my opinion adequate. The last annual grant by the County Council amounted to £65 6s. 8d., *viz.*, £41 6s. 8d., for repayment of loan and £24 for maintenance (£6 per bed for four beds). There is a steam disinfecter.

There is no provision for small-pox, and the proposal to accommodate such cases on the existing hospital site is not a satisfactory one.

Newmarket Rural.—The Joint Isolation Hospital is a permanent one, shared with Moulton Rural District (West Suffolk), and cases from Newmarket Urban are also accommodated by agreement. There is an administrative block, a pavilion of four wards, and a small observation block of two single bedded wards. The airspace suffices for 16 beds, including the two observation beds, of which Newmarket Rural District (population 20,024) is entitled on a population basis to 14. Recent experience shews that this is insufficient to meet epidemic requirements adequately, and plans for additional accommodation have been considered by the Joint Committee. There is no steam disinfecter.

The last annual grant made by the County Council amounted to £110 9s. 11d., viz., £26 9s. 11d. towards repayment of loan, and £84 towards the maintenance of 14 beds at £6 per bed.

There is no accommodation for small-pox.

The following paragraphs quoted from a report which I recently presented to the Public Health Committee indicate the position as regards isolation hospital accommodation within the County taken as a whole.

“ Adequacy of Arrangements.—The standard usually adopted is that of one bed for each 1,000 of the population, but local circumstances may require to be taken into account. Estimated by this standard the provision made (estimated on a basis of either 2,000 or 1,872 cubic feet), and that required, would be as follows, the estimate of beds provided being in each case the number to which the Authority is entitled by reason of the proportion borne by its population to the total population served by the hospital in question :—

	Population.	Beds required.	Beds provided.	Deficiency.
Cambridge Borough	56522	56	36	20
Caxton & Arrington				
Rural	7775	8	?	?8
Chesterton Rural ..	23446	23	say 8	15
Melbourn Rural ..	8538	8	4	4
Linton Rural ..	10546	10	—	10
Newmarket Rural ..	19914	20	14	6
Swavesey Rural ..	2598	2	—	2

“ Further details are as follows :—

“ *Cambridge Borough.*—The present deficiency will be remedied by the scheme in hand for accommodation for 26 additional beds. The remaining problem is therefore a rural one.

“ *Chesterton.*—Deficiency of 15 beds. Can only safely accommodate one disease, which has greatly hampered the Council in dealing with recent concurrent outbreaks of diphtheria and scarlet fever.

“ *Melbourn.*—Eight beds, shared with two Hertfordshire districts. Can only accommodate one disease. The original scheme was for 24 beds, of which the Melbourn District's proportion would have been 12.

“ *Newmarket.*—Sixteen beds, shared by a West Suffolk district. Two (? three) diseases can be admitted concurrently, but recent outbreaks have caused great pressure on accommodation.

“ *Linton.*—No arrangements.

“ *Swavesey*.—No hospital, and arrangement with Chester-ton practically valueless as accommodation is insufficient.

“ *Caxton and Arrington*.—Temporary hospital is not used, and has no proper water supply or accommodation for staff. Arrangement with Biggleswade (Beds.) seldom made use of.

“ Summarising, the provision made in the Newmarket and Melbourn Districts requires supplementing, while in Chester-ton it is quite inadequate. In Linton it is non-existent, and in Caxton and Arrington and Swavesey practically so. I do not advocate the establishment of separate Isolation Hospitals, which would be expensive and, being small, might be inefficient. Combination is clearly desirable, and a large central hospital at Cambridge would in my opinion be the best solution, but the cost of land adjacent to the present site is very great, and the other existing hospitals must be taken into consideration. A scheme of extension of the latter institutions, adequate for the needs of all the Rural Districts, promises the most likely solution, and with such joint action a smaller total number of beds might prove to meet the requirements of the County area than might otherwise be necessary.

“ *Small-Pox Accommodation*.—I have already reported fully on this question. The present position is briefly as follows :—

“ The Cambridge Borough Council have a temporary structure consisting of an administrative block and two ward pavilions on a site on the outskirts of the town. Tents are available for rapid extension.

“ Caxton and Arrington Rural District have an isolated temporary structure never yet used and of doubtful value

owing to absence of water supply and of adequate accommodation for administration.

“ There is no provision in the remaining districts.

“ In view of the rapid increase of the number of unvaccinated children throughout the County adequate organised arrangements for isolation of cases constitute a matter of great importance and in my opinion one central hospital should serve the needs of the whole area. This points to a joint arrangement for the use of the site of the Cambridge Small-pox Hospital, and some extension of the existing provision might reasonably be considered.

“ I would advise that a conference with the Local Sanitary Authorities be called by the County Council on the whole matter of hospital provision both for the ordinary infectious diseases and (separately) for small-pox, and that the County Council, if necessary, be prepared to take action subsequently, under the Isolation Hospitals Acts, to remedy the existing deficiency.”

On consideration of the foregoing report by the Public Health Committee, a special Sub-Committee was appointed to go into the matter. This Committee reported in the following terms :—

- (a) Some combination for isolation hospital purposes of the Caxton and Arrington, Chesterton, Linton, and Swavesey Rural Districts is desirable. The inclusion of Melbourn and Newmarket Rural Districts in a new hospital district, though otherwise desirable, would present difficulties owing to the fact that the hospital accommodation already existing for those districts provides also for districts in other Counties.

- (b) If some such combination is formed, consideration should be given to the possibility of utilising the existing isolation hospital buildings of the Chesterton Rural District Council as the nucleus of a larger institution.
- (c) If the County Council decide to provide a hospital for the more infectious cases of pulmonary tuberculosis, as requested by the Insurance Committee, it might be advantageous if such a hospital could be accommodated on the same site as the isolation hospital, as advocated by the Local Government Board.
- (d) If the Committee consider that some steps might usefully be taken on these lines, a conference should be held between representatives of the Committee and representatives of the Rural District Councils.

The County Council have instructed the Clerk to convene a conference between the Public Health Committee and representatives of the Rural District Councils.

METHODS OF CONTROL OF TUBERCULOSIS.

Compulsory notification of cases of pulmonary tuberculosis by medical practitioners came into force in January, 1912, and this was extended to include tuberculosis of all organs from February 1st, 1913. Duplicates of notifications are sent weekly by the local Medical Officers of Health to the County Medical Officer, by whom they are placed at the disposal of the Tuberculosis Officer. This information will be tabulated annually by the County Medical Officers for transmission to the Local Government Board, and the first

annual table, for 1913, is appended to this report. (Table VII.)

In addition to the foregoing system of notification, unnotified cases of tuberculosis come to light from time to time through application to the Insurance Committee for sanatorium benefit, and similarly through reference by charitable organisations to the Tuberculosis Officer for his opinion and guidance.

The efficiency with which notification is carried out is not only a matter of great practical importance, as affording access to individual cases and indicating the extent of prevalence of tuberculosis, but it may also be regarded as an index to the completeness of the administrative arrangements for dealing with the cases notified. Dr. Newsholme points out in his last annual report to the Local Government Board that though several years' experience will be needed before reliable inferences can be drawn from the variations in different areas in the proportion of notifications to deaths, yet where the notifications of pulmonary tuberculosis do not exceed twice the deaths, the question arises whether the local administrative arrangements are such as to ensure the confidence of practitioners and their patients. In other words, are the benefits derived such as to encourage medical practitioners to carry out their statutory duty to notify cases of tuberculosis?

A reference to the paragraphs dealing with tuberculosis in the section on vital statistics will show that during 1913 in the whole county the notifications of pulmonary tuberculosis were rather less than double the deaths; in the rural area the number of notifications was double that of the deaths, and in the urban area notifications fell short of double the

deaths by about 10 per cent. Judged by this suggested index the facilities afforded were not a sufficient inducement to the fulfilment of the legal obligation to notify. It must, of course, be remembered that much consideration is required when setting up new machinery, and that much negotiation between various bodies is also involved, all of which occupies time. At the end of 1912 the provision of sanatorium benefit by the Insurance Committee was added to the administrative operations of the local sanitary authorities, and continued throughout 1913. The appointment of a County Tuberculosis Officer was not made till the end of 1913, and the Dispensary Scheme did not come into operation until early in 1914.

The administrative arrangements can best be considered in relation to the principal bodies concerned—(a) the Local Sanitary Authorities, (b) the Insurance Committee, and (c) the County Council.

Local Sanitary Authorities.—The action taken by the District Councils is understood to be mainly as follows :—

Visitation and Instruction.—The Authorities' officers visit the homes of notified cases for purposes of enquiry and sanitary control ; printed instructions for the prevention of infection are furnished. In Cambridge Borough the visitation was in the hands of two different sets of visitors—one for the uninsured and one on behalf of the Insurance Committee—an arrangement noted by Dr. Laird as unsatisfactory. Since the end of the year this has been remedied, the visitation being done by the County Tuberculosis Nurse, whose reports are placed at the disposal of the Medical Officer of Health for Cambridge. I think it would be desirable also for the leaflets of instruction to be uniform throughout

the County, drawn up by the County officers in agreement with the local officers, and provided as part of the County tuberculosis administration, the cost being shared by the Treasury (and Insurance Committee ?)

Receptacles and Disinfectants for Sputum.—These are said to be supplied in all sanitary districts, but patients are not infrequently found on enquiry not to have received them, although required. The Officers of the District Councils are asked to supply these where the county tuberculosis staff find that they are needed. But here again the question arises whether they could not be supplied more uniformly and at less local cost through the County organisation.

Bacteriological Examination of Sputum.—This aid to accurate and early diagnosis is made by several, but not all, of the District Councils, and as pointed out elsewhere it is desirable that a uniform arrangement should be made throughout the County.

Disinfection.—This is carried out in all sanitary districts at death or on removal, and the county staff notify the local authorities of the admission to a sanatorium of any insured person in order that disinfection of the premises may be arranged for. A high standard of cleanliness is the best disinfectant, and with an adequate staff for home supervision it is hoped that this may be attained ; but the defective arrangements for admission of fresh air and sunlight into so many cottage homes renders some form of chemical disinfection a necessity.

Open-air Shelters.—These have been lent by Cambridge Borough, and the Caxton and Arrington, Chesterton, Melbourn and Swavesey Rural Authorities. They have also been

loaned by the County Council, through the Insurance Committee, and are also available for the uninsured.

Housing and General Sanitation.—These have a very important bearing on tuberculosis, and are primarily in the hands of the Local Sanitary Authorities. The attention of these bodies is drawn to defects observed during home visitation by the county tuberculosis staff. I have made special reference to the relation of housing to tuberculosis in the section on housing.

The arrangement in Cambridge Borough for the medical examination of “contacts” in infected households by a private practitioner continued through 1913, but has ceased since the services of the County Tuberculosis Officer became available.

Cambridgeshire Insurance Committee.—The County Medical Officer continued to act during the year as Medical Adviser to the Insurance Committee with regard to applications for sanatorium benefit, his duties in this respect terminating in February, 1914, when Dr. F. C. Davies entered into office as Tuberculosis Officer.

All applications by insured persons for sanatorium benefit are carefully considered in detail by a special sub-committee, and each case comes up for re-consideration quarterly, or earlier if necessary. Prior to consideration by the Committee each case is investigated by the Clerk, the Tuberculosis Officer and the Tuberculosis Nurse. The forms of benefit hitherto available are as follows :—

(a) The applicant may be sent to a sanatorium provided his or her case would benefit by this form of treatment. There

is some misconception on this point on the part of some applicants who consider themselves entitled to be sent to a sanatorium. Not infrequently the application has been delayed until too late for sanatorium treatment to be of value. Also accommodation is limited, and the number of admissions is governed by the type of case which the managers of these institutions are willing to receive. Delay has been experienced in some cases in getting applicants into sanatoria owing to there being no vacancies, but there has been a recent improvement in this respect.

(b) Dispensary supervision may meet the requirements of the case. This includes the advice of the Tuberculosis Officer and the assistance of the Tuberculosis Nurse. A more extended reference to this organisation is made in subsequent paragraphs headed "County Council."

(c) Treatment in the applicant's home by a private practitioner, including the provision of the necessary medicines and appliances. This may be supplemented by a weekly allowance for food where the applicant's condition and circumstances call for it. Open-air shelters are also lent free of charge where the premises are suitable. The 28 shelters belonging to the County Council are chiefly in use by insured persons.

The following information taken from returns made to the Insurance Commissioners afford some indication of the work done by the Committee during the year 1913 :—

A.—NEW APPLICATIONS DURING THE YEAR.

	Applied.	Recommended.	Received Pulmonary.	Treatment. Non-Pulmonary.	Total.
Male ...	69	68	58	5	63
Female..	21	20	16	3	19
	—	—	—	—	—
Total .	90	88	74	8	82

B.—NATURE OF TREATMENT

(including cases remaining from 1912).

	Male.	Female.	Total.
Sanatorium	20	5	25
Domiciliary	71	19	90

C.—SANATORIUM RESULTS.

	Male.	Female.	Total.
<i>Discharged —</i>			
(a) Fit for work	6	—	6
(b) Improved	5	2	7
(c) Not improved	2	1	3
(d) Worse	2	—	2
Discontinued for non-medical reasons	1	1	2
Died	—	—	—
Total concluded	16	4	20
Still under treatment	4	1	5
Total treated	20	5	25

D.—DOMICILIARY RESULTS.

	Male.	Female.	Total.
<i>Completed—</i>			
Fit for work	5	1	6
Recommended other form of treatment	1	—	1
Discontinued for non-medical reasons	5	1	6
Died	13	4	17
Total concluded	24	6	30
Still under treatment	47	13	60
Total treated	71	19	90

County Council.—During the year 1913 the Council's active participation in tuberculosis administration was practically confined to lending the services of their Medical Officer to the Insurance Committee for tuberculosis purposes, and providing open-air shelters for loan to this Committee. It will, however, be remembered that in 1912 the Council arranged conferences with representatives of adjoining County Councils, the outcome of which was a resolution in favour of the combination of Bedfordshire with this County for the provision of a sanatorium. This recommendation was, however, hung up for various reasons, mainly arising out of County Borough proposals in which both County Councils were interested. In the meantime a scheme for the provision of a tuberculosis dispensary organisation was drawn up in November, 1912, and was eventually adopted by the Council in July, 1913. Negotiations proceeded with the Local Government Board, the Insurance Commissioners, and the Cambs. Insurance Committee, and it was agreed that the Insurance Committee should contribute one-third of the annual working cost, the Local Government Board and the County Council each contributing a similar proportion. Further negotiations with the Insurance Committee followed, and eventually Dr. F. C. Davies was approved by the Local Government Board for appointment as part-time Tuberculosis Officer, and took up his duties early in 1914.

The working of the Dispensary System does not come within the period under review, but a brief statement may be made with advantage. While the County Medical Officer of Health is the chief administrative officer, the Tuberculosis Officer is the expert clinical officer and carries out the details of dispensary management. He advises the Insurance Committee as to applications for sanatorium benefit, and his services as consultant are also available for the uninsured,

and for the examination of contacts for the detection of tuberculosis in its early stages.

As regards premises, the Local Government Board have approved the establishment of a central dispensary in Cambridge, the provision of branches in the rural districts being deferred until experience shows where they are more particularly needed, patients in these areas being therefore visited in their homes as occasion arises. Central offices have been provided in Cambridge, which are used for dispensary purposes, and negotiations are proceeding with Addenbrooke's Hospital for the use of the new out-patient department on certain days of the week.

Nurse Bourn was appointed as Tuberculosis Nurse in 1914, partly for assistance at the Dispensary, but principally for enquiry and supervision in the homes of sufferers, and for instruction in modes of living which shall assist them towards recovery and prevent the infection of other members of the household. The nurse's functions are not those of nursing as ordinarily understood, but of health visitation. She also makes such enquiries as are needed to enable the Insurance Committee to decide whether a special food allowance is necessary, and brings the uninsured into touch with voluntary charitable agencies where necessary. It will be seen that this is work of a very valuable kind, but a brief experience has already shown that it cannot be carried out throughout the whole county area by one officer, and an additional appointment is urgently necessary.

Up to the present no institutional provision has yet been made by the County Council, and the Insurance Committee are sending their cases to private sanatoria. The need is undoubtedly felt not only for sanatorium beds but especially

for isolation accommodation for those advanced cases who are a menace to the health of their relatives. The view is gaining ground that a building capable of accommodating all types of case, viz., those requiring observation, sanatorium cases, and advanced cases, combined with improved accommodation adjacent for other types of infectious disease, would constitute an efficient and economical institutional unit. This matter is receiving the attention of a special Committee, and in the meantime negotiations are proceeding with Addenbrooke's Hospital with a view to the provision of several beds for purposes of observation.

Mention should be made of open-air shelters, of which 28 have been provided by the County Council and are available for both insured and uninsured, though mainly in use, so far, by the former. I believe this to be a very profitable investment, and am convinced that under the existing conditions of housing of many of the sufferers, in the rural areas especially, shelters are absolutely essential to their recovery. The number of shelters purchased is already insufficient to meet urgent requirements, and more are needed.

VITAL STATISTICS AND INCIDENCE OF INFECTIOUS DISEASE.

The County is sharply divided into an urban area, viz., Cambridge Borough, and a containing ring entirely rural in character. For statistical purposes Cambridge Borough is comparable with the Registrar General's "95 Great Towns," the populations of which exceed 50,000, while the rest of the County is collectively comparable with "England and Wales, less the 213 towns," *i.e.*, rural England and Wales.

The following are the principal items of the vital statistics for the year :—

Area, 314,520 acres (exclusive of area covered by water). Population (estimated), middle of 1913, 130,253. Census 1901, 120,264; Census 1911, 128,322; decennial increase, 6.7 per cent., rural, 6.18. Proportion of population in urban area, 43.4 per cent.; in rural, 56.6 (England and Wales 78 per cent. urban, and 22 per cent. rural). Density of population, 261 persons for square mile (England and Wales, 618), or 2.4 per acre; persons per dwelling, 4.15, urban 4.24, rural 4.07.

Births registered (net), 2,511; birth-rate, 19.3 per 1,000 of population.

Deaths registered (net), 1,659; net death-rate, 12.7 per 1,000 of the population; standardised for age and sex distribution, 10.7 per 1,000.

Infantile mortality, 188 deaths under one year, or 75 per 1,000 *births* registered.

Notified cases of infectious disease, excluding tuberculosis, 820, or 6.3 per 1,000 of the population.

Notified cases of tuberculosis, pulmonary, 208 or 1.59 per 1,000; other forms, 93 or 0.71 per 1,000.

Epidemic (zymotic) death-rate, 122 deaths from principal infectious diseases (excluding tuberculosis), or 0.93 per 1,000 of the population.

Tuberculosis death-rate, 138 deaths, or 1.06 per 1,000 (108 pulmonary, or 0.83 per 1,000 ; 30 other forms, or 0.23 per 1,000).

Cancer death-rate, 171 deaths, or 1.31 per 1,000 living.

Respiratory death-rate, 198 deaths, or 1.52 per 1,000 living.

General Statement.—After a slight rise in 1912 the downward tendency of the birth-rate was resumed in 1913, when the proportion of births to population fell by 1 per 1,000. Both urban and rural rates are below the corresponding average rates for the whole of the country. On the other hand there is a fall to be recorded in the death-rate from all causes in the urban area, while the rural rate is practically the same as that of 1912. After standardising by correcting for age and sex distribution, both urban and rural rates are well below those for corresponding areas of England and Wales. Both the birth-rate and death-rate from all causes are the lowest yet recorded for the County.

The rate of mortality among infants rose from 66 deaths per 1,000 births in 1912 to 75 in 1913, the rise being partly attributable to deficiency in the rain fall, which on the other hand would be to some extent accountable for the reduction in the number of deaths from diseases of the lungs.

There were but few notifications of enteric fever during the year, and there was a large reduction in the number of cases of scarlet fever and diphtheria. Scarlet fever continued to be mild in type and therefore difficult to recognise and control, while diphtheria continued to be of a fatal type. The prevalence of these two diseases was still appreciably

above the average for England and Wales. Deaths from diarrhoea among infants were more numerous than in 1912.

No case of small-pox occurred during the year, but the rapidly increasing number of exemptions from vaccination, on the score of "conscientious objection," places the children in a position of great danger should cases of small-pox be introduced into the County.

Deaths from pulmonary tuberculosis were slightly more numerous in 1913 than 1912, but there was a little reduction in mortality from all forms of tuberculosis. It may be hoped that the detection of early cases by the dispensary system recently organised will sensibly diminish mortality from this cause at no distant date.

An unusual feature in the vital statistics for 1913 is a small reduction in the number of deaths registered as due to cancer, the mortality attributed to this disease having shown a continuous rise during recent years.

Birth-rate.—The birth-rate for England and Wales in 1913 was 23.9 per 1,000 living, being 0.1 above the 1912 rate, and, with this exception, was the lowest rate on record. In the County the birth-rate during 1913 was 19.3 per 1,000 living, a decrease of 1.0 on the rate for 1912, and of 1.3 on the average annual rate during the preceding 5 years.

The rate in Cambridge Borough was 19.4, against 25.1 for the 95 great towns, and in the rural portion of the County was 19.2, against 22.3 for rural England and Wales. The rates for the respective districts were:—Cambridge Borough, 19.4; Caxton and Arrington Rural, 17.9; Chesterton Rural, 18.9; Linton Rural, 16.4; Melbourn Rural, 16.7; Newmarket

Rural, 22.9, and Swavesey Rural, 17.2. As for several years past the highest rate was recorded in Newmarket Rural District.

It will be observed that both urban and rural rates, and especially the former, are considerably lower than the average rates for both types of district in England and Wales ; but it should be borne in mind that there is no mining and practically no manufacturing population in this County, both of which classes of the community have birth-rates considerably above the average. In mining Counties there are collieries in many rural districts, though the official designation of " Rural District " does not suggest this.

There were 115 illegitimate births in the County (45 urban, 70 rural), a rate of 4.5 per 100 births (4.0 urban, 4.9 rural), against 4.12 in 1912, or 0.88 per 1,000 of the population, against 0.85 in 1912. In the various districts the percentage of illegitimate to total births was :—Cambridge Borough, 4.0 ; Caxton and Arrington Rural, 2.8 ; Chesterton Rural, 3.5 ; Linton Rural, 5.7 ; Melbourn Rural, 10.0 ; Newmarket Rural, 5.0, and Swavesey Rural, 6.6 per cent.

Death-rate from All Causes.—After deducting deaths of non-residents within the County, and adding the deaths of residents which occurred elsewhere, a net death-rate of 12.7 per 1,000 is arrived at, being a decrease of 0.3 per 1,000 on the rate for 1912, and of 0.4 on the average of the preceding five years. The corresponding rates for the urban and rural portions of the County are 11.9 and 13.1 per 1,000 respectively. After standardising by applying the Registrar General's factors for correction for differences of age and sex distribution, by which such data for different localities are rendered strictly comparable, these rates are reduced to 10.7 for the

County, 11.1 for the urban area, and 10.3 for the rural area. The standardised rate for England and Wales was 13.4, the lowest yet recorded with the exception of that for 1912, which was only 0.1 below. The corresponding rate for the 96 Great Towns was 14.7, and for rural England and Wales was 12.1. The Cambs. urban rate was therefore 3.6 per 1,000, and the rural rate 1.3 per 1,000 lower than the corresponding rate in the country as a whole ; also, the urban rate was 1.0 per 1,000 below that for the preceding year, while the rural rate was 0.1 above the 1912 rural rate, practically equal. The standardised rate for the County showed a reduction of 0.3 per 1,000 on that for 1912. The standardised rates for the respective districts were :—Cambridge Borough, 11.1 ; Caxton and Arrington Rural, 9.9 ; Chesterton Rural, 10.1 ; Linton Rural, 11.1 ; Melbourn Rural, 9.5 ; Newmarket Rural, 11.3, and Swavesey Rural, 9.7 per 1,000 living.

As compared with 1912, the principal features as regards causes of death are appreciable reductions in the number of deaths from respiratory diseases and from diphtheria, with some increase in infantile mortality and in deaths associated with child-birth. The greatest increase is assigned to organic heart disease, but this may be apparent and not actual. A decrease in deaths from scarlet fever should also be noted.

Rate of Infantile Mortality.—The number of deaths under one year constituted a rate of 75 per 1,000 *births* registered, an increase of 9 per 1,000 births compared with the 1912 rate, but a decrease of 5 compared with the average for the preceding five years. The rate for England and Wales was 109 per 1,000 births, 14 in excess of the 1912 rate.

The corresponding rate for Cambridge Borough was 73, against 117 for the 96 Great Towns, and for rural Cambs. was

76, against 96 for rural England and Wales. The rates for the various Districts were :—Cambridge Borough, 73 ; Caxton and Arrington Rural, 36 ; Chesterton Rural, 67 ; Linton Rural, 115 ; Melbourn Rural, 80 ; Newmarket Rural, 70, and Swavesey Rural 66 per 1,000 births. There was thus within the County area a very considerable range in mortality among infants, varying from as low as 36 to as high as 115.

Nine illegitimate infants died (5 urban, 4 rural), the deaths being in the proportion of 78 per 1,000 births (urban rate 111, rural 57 per 1,000). This relative mortality greatly exceeded that among legitimate infants in the urban area, where the corresponding legitimate rate was 72 deaths per 1,000 births, but was lower in the rural area (illegitimate 57, legitimate 76 deaths per 1,000 births).

The principal causes of increased mortality among infants were premature birth and diarrhoea. Whooping cough caused 13 deaths.

The Notification of Births Act is in force in Cambridge Borough, and 87 per cent. of the births were notified during the year. Notifications by doctors and parents show an increase, while those by midwives show a corresponding reduction. The system of home visitation undertaken by the three Health Visitors of the Cambridge Branch of the League of Physical Education and Improvement continued throughout the year, under the direction of the Medical Officer of Health. Infant consultations by Dr. G. S. Haynes and Dr. C. Searle were also continued, and two additional centres have been opened.

The County Council have during the year 1914 resolved to adopt the Notification of Births Act for the rural portion

of the County, and to utilise the nursing and supervisory staff of the County and District Nursing Associations for purposes of home visitation. It is hoped by judicious and tactful advice to the mothers to effect not only a saving of infant life in the rural areas, but a higher standard of domestic hygiene from which a corresponding improvement in the general physical condition of the children may confidently be looked for.

Epidemic Diseases.—Excluding tuberculosis, there was a very considerable reduction in the number of cases of infectious disease notified, viz., 820 in 1913, as compared with 1,331 in 1912. This diminution was principally due to a decline in the prevalence of scarlet fever and diphtheria, the decrease of scarlet fever being more marked in the rural districts and of diphtheria in Cambridge Borough. The notifications of infectious disease were equivalent to a rate of 6.3 per 1,000 living—7.9 in Cambridge Borough and 5.0 in the rural area. As usual, scarlet fever and diphtheria combined constituted the bulk of the cases, viz., 89 per cent. of the total. The low notification rate for enteric fever continued, but there was some increase in mortality due to diarrhoea and enteritis.

The epidemic (zymotic) death-rate relates to deaths from the principal epidemic diseases, whether notifiable or not, viz., small-pox, measles, whooping cough, scarlet fever, diphtheria, enteric fever, and diarrhoea and enteritis among children under two years of age. These diseases caused 104 deaths during 1913, equivalent to a mortality rate of 0.80 per 1,000 living, some reduction on 0.94 for the preceding year. The urban and rural rates were 0.87 and 0.74 respectively. The Borough rate is mainly attributable to diphtheria, whooping cough and diarrhoea; the rural epidemic mortality being mainly due to diphtheria and whooping cough.

Small-pox.—No case of small-pox occurred in the County. The situation as regards protection from this disease by vaccination continues to be very disquieting. Children recently admitted to school afford a useful index, and in the schools in the Cambs. County Education area, *i.e.*, in the rural districts, the proportion of children aged from three to six, noted to have no vaccination scars, continues to increase. The proportion of such children in 1909 was 6.7 per cent., and had increased in 1913 to 32.6 per cent. In Cambridge Borough the percentage of so-called conscientious objections in 1912 was 59 per cent., and in the first half of 1913 was 63.7 per cent. Similarly the proportion of exemptions from vaccination has increased in the Linton Rural District from 1.8 in 1904 to 35.3 in 1913.

Scarlet Fever.—There was a considerable reduction of prevalence of this disease in 1913 as compared with 1912, viz., 526 cases notified, against 921, yielding a rate of 4.03 notifications per 1,000 living, which is still appreciably higher than the average for the English administrative counties, viz., 2.96 per 1,000. The reduction was more marked in the rural than in the urban area. The rate for the Borough of Cambridge was still rather above that for the Great Towns of England, the 312 notifications yielding a rate of 5.46 per 1,000 living, against 4.26 for the Great Towns of England. The rural rate was slightly above that for rural England, the 214 notifications yielding a rate of 2.92 per 1,000, against 2.61 per 1,000.

The deaths from scarlet fever numbered 7, of which 4 occurred in Cambridge Borough and 3 in the rural area. The equivalent mortality rates per 1,000 of the population were:—County, 0.05 (England and Wales, 0.06) ; Cambridge Borough, 0.07 (Great Towns, 0.07) ; rural area, 0.04 (rural

England and Wales, 0.05). Although the incidence was still in excess, it will be seen that the mortality was not above the average. A mild type, in fact, continues to prevail, and the difficulty of recognition contributes materially to the spread of the disease. Dr. Laird notes that in Cambridge 20 cases were not notified until desquamation had occurred, the period elapsing before recognition or the visit of a doctor varying from two to four weeks.

There is nothing of special interest to record in the rural districts. The districts principally affected were Chesterton and Newmarket Rural, but both show a considerable reduction in prevalence compared with 1912.

Diphtheria.—The notified cases numbered 202, against 306 in 1912, yielding a case-rate of 1.55 per 1,000 as compared with 1.26 for the English Administrative Counties. In Cambridge Borough there were 101 cases, a case-rate of 1.76 per 1,000 (Great Towns 1.48), and in the rural area there were 101 cases, yielding a rate of 1.38 per 1,000 living, somewhat higher than that for rural England, viz., 1.03.

The mortality rates in the same period were 0.33 for the County (43 deaths), against 0.12 for England and Wales; 0.38 for Cambridge Borough (22 deaths), against 0.13 for the Great Towns, and 0.28 per 1,000 for the rural area (21 deaths), against 0.11 per 1,000 for rural England and Wales.

It is thus evident that while the prevalence was not very greatly in excess of the average, the mortality was much higher than that experienced in the country generally, and points to a continuance of the virulent type which has been noted previously.

Dr. Laird gives interesting examples of "carrier" children to whose chronically infective condition repeated outbreaks of diphtheria among school children in association with them are conclusively traced by bacteriological evidence. He refers also to the growing mass of evidence pointing to the part played by children affected with enlarged tonsils or adenoids in acting as carriers of diphtheria. This accumulating experience is an additional argument for the prompt treatment of these morbid conditions by removal.

In Chesterton Rural District, as many as 12 deaths occurred among the 43 notified cases. Apart from sporadic cases there were outbreaks in six parishes, and here again carrier cases played a prominent part in the spread of infection. The need for isolation hospital provision for diphtheria in this district has been amply demonstrated during the year.

In Newmarket Rural District, where 54 cases occurred (nine fatal), three localities, Woodditton, Westley Bottom and Swaffham Bulbeck, were principally affected. In the parish last mentioned, seven cases, with three fatalities, occurred in one household.

Enteric Fever.—The incidence of this disease continues to be limited. Sixteen cases were notified in the County, yielding a notification rate of 0.12 per 1,000 living, or only about half the average prevalence for the administrative Counties generally, viz., 0.22 per 1,000. There were eight cases in the urban and eight in the rural area, the former yielding a rate of 0.14 per 1,000 against 0.25 for the English Great Towns, and the latter a rate of 0.11 against 0.18 for rural England.

Two deaths occurred, both in Newmarket Rural District, yielding a mortality rate for the County of 0.02 per 1,000 against 0.04 for England and Wales, and of 0.03 for the rural area against 0.04 for rural England and Wales. Mortality was therefore appreciably below the average.

Erysipelas.—There were 58 notified cases, 29 in the Borough of Cambridge and 29 in the rest of the County. The equivalent rates are 0.44 for Cambs. (Administrative Counties 0.52), 0.50 for Cambridge Borough (0.74 for the Great Towns) and 0.30 for the rural area (0.43 for rural England). These rates are all below the average.

The persistently high notification rate for erysipelas in Caxton and Arrington Rural District has fallen greatly, only three cases being notified in 1913.

Puerperal Fever.—Seven cases were notified, the rate for the County being 0.05 per 1,000 living, or slightly higher than the average for Administrative Counties (0.04 per 1,000). Three of the notifications were from Cambridge Borough, and four from the rest of the County, giving a rate of 0.05 per 1,000 in urban and rural districts alike. The deaths were five in number, three urban and two rural, yielding a mortality rate of 0.05 per 1,000.

Diarrhoeal Diseases.—The number of deaths from diarrhoea and enteritis rose from 12 in 1912 to 22 in 1913, of which 17 occurred under two years of age, the period of life upon which the mortality rate for diarrhoeal diseases is based. The death-rates per 1,000 *births* from this cause during 1912 were 6.77 for the County (England and Wales, 23.41), 9.91 for Cambridge Borough (29.33 for the Great Towns) and 4.27 for the rural area (14.39 for rural England and

Wales). Though an increase on 1912, those rates are not high compared with those for the country at large.

A rainfall below the average no doubt was mainly responsible for the increased diarrhœal death-rate. The dry spell of 1913 especially embraced the months of July and August, and the rainfall in Cambs. was approximately $2\frac{1}{4}$ inches below the average in the third quarter of the year. The temperature in the Eastern Counties, however, during this period averaged from two to three degrees below the normal, and this would to some extent counteract the influence of the lack of rainfall in favouring the spread of diarrhœa, otherwise a higher mortality from this cause might have been expected in Cambs.

Measles.—There were only six deaths from this cause during the year, one of which occurred in Cambridge Borough and five in the rural area. The relative mortality rates per 1,000 living were :—

Cambridgeshire, 0.04 (England and Wales, 0.28), Cambridge Borough 0.01 (96 Great Towns, 0.34), and rural Cambridgeshire 0.07 (Rural England and Wales, 0.20).

Whooping Cough.—This disease, which was very prevalent during 1912, continued to spread during 1913 and caused 29 deaths, 12 in Cambridge Borough and 17 in the rural area. It contributed materially to mortality among young children, 13 deaths occurring in the first and 11 in the second year of life. A quarter of the deaths in Cambridge Borough (3 of 12) occurred in the first year of life against more than half (10 of 17) in the rural area. It is a curious fact that the proportion of infantile to total deaths from whooping cough is highest in rural districts and lowest in the

large towns. This is difficult of explanation in view of the greater opportunities for infection of infants in the great towns. The actual rates per 1,000 living were :—

Cambridgeshire, 0.22 (England and Wales 0.14), Cambridge Borough 0.21 (96 Great Towns 0.17), and Rural Cambridgeshire 0.23 (Rural England and Wales, 0.12). Loss of life relatively to the population was greater therefore from this cause in Cambridgeshire than in England and Wales, and especially in the rural districts.

Cerebro-Spinal Fever.—Two cases of this disease were notified and three deaths were recorded—one would appear not to have been notified during life.

Acute Poliomyelitis (Infantile Paralysis).—Nine cases were notified, but two proved to be tuberculosis. Of the seven genuine cases five were males and two females, whose ages were 2, 3, 4, 6, 6, 6, and 12 respectively; one proved fatal. All commenced in the third quarter of the year at dates between July 6th and the end of September, and all the children lived in rural parishes. There were two foci of infection. (a) Four cases occurred at Kirtling, two in the village and two in isolated houses on the outskirts; they followed each other at intervals of 17, 17 and 40 days respectively. Only one was of school age, and no other cases are known to have occurred in the households affected. Enquiry at the School did not elicit information of any suspicious illness among children in attendance, but the School holidays occupied some six weeks of the 12 covered by these cases. (b) The remaining three notified cases were in the parishes of Babraham, Little Abington and Fulbourn (Worsted Lodge), which immediately adjoin each other. As regards the Little Abington case it is interesting to note that a sister of school age

had " tonsilitis " about the date of onset of poliomyelitis, and a few days later a brother of school age had much pain in one arm with temporary loss of use, and was regarded as suffering from rheumatism. It is possible that these were anomalous cases of poliomyelitis, and there is some ground for the opinion that a good many such cases occur and are responsible for much spread of infection otherwise unaccountable in the light of present knowledge.

Pulmonary Tuberculosis.—Allowing for duplicates, the total number of notifications was 208, equivalent to a rate of 1.59 cases per 1,000 of the population ; the corresponding notification rate for England and Wales, but based on the 1912 population, was 2.64 per 1,000. Cases notified within Cambridge Borough numbered 86, and in the rural area 122, yielding notification rates of 1.50 and 1.66 respectively. The proportion of urban and rural notifications was practically as in 1912, viz., 41 per cent. from the urban and 59 from the rural districts.

The number of deaths registered from this cause was 108 in the whole County, 48 in Cambridge Borough and 60 in the rural area, yielding mortality rates of 0.83, 0.84 and 0.82 per 1,000 persons living respectively. The relative mortality from pulmonary tuberculosis is thus seen to have been practically equal in both town and country. The mortality rates for individual sanitary districts were :—Cambridge Borough 0.84, Caxton and Arrington Rural 0.9, Chesterton Rural 0.73, Linton Rural 0.85, Melbourn Rural 0.58, Newmarket Rural 0.99 and Swavesey Rural 0.76 per 1,000 living.

Subject to fluctuations, and doubtless influenced by differing climatic conditions during successive years, the mortality from pulmonary tuberculosis shews a definite

tendency to decline which is best seen by taking the average for successive periods of years. The following figures show a decline from an average of 91 deaths per 100,000 persons for the past 10 years to an average of 85 deaths per 100,000 for the past five years and a rate of 83 deaths per 100,000 during 1913.

		Deaths		Rate per 1,000
1903	..	117	..	0.96
1904	..	106	..	0.86
1905	..	128	..	1.03
1906	..	126	..	1.01
1907	..	118	..	0.94
1908	..	122	..	0.90
1909	..	107	..	0.84
1910	..	118	..	0.92
1911	..	95	..	0.73
1912	..	105	..	0.81
Average for 10 years				
1903-1912		114	..	0.91
Average for 5 years				
1908-1912		109	..	0.85
1913	...	108	...	0.83

Tuberculosis of Other Organs.—Notification of tuberculosis affecting other organs than the lungs came into operation compulsorily on February 1st, 1913. During eleven months of the year 93 notifications were received for the whole County (0.71 per 1,000 of the population, against 1.14 for England and Wales) 32 from Cambridge Borough (0.56 per 1,000) and 61 from the rural area (0.84 per 1,000). The rate of notification was therefore appreciably higher in the rural than in the urban area, whatever may have been the cause, but the mortality was identical in both types of area,

viz., 0.23 per 1,000 living. This is based on 13 deaths in the Borough of Cambridge and 17 in the rural area.

Of deaths from all causes during 1913, tuberculosis of all organs accounted for 1 in 12 in the County, 1 in 11 in Cambridge Borough and 1 in 12 in the rural area. Similarly pulmonary tuberculosis ("consumption") caused 1 death in 15 in the whole County, 1 in 14 in Cambridge Borough and 1 in 16 in the rural districts.

Cancer.—The recorded deaths from cancer numbered 171, as compared with 177 in 1912, 70 occurring in Cambridge Borough and 101 in the rural area. The proportion of deaths per 1,000 living was 1.31 in the whole County, 1.22 in the urban area, and 1.38 in the rural districts. The Registrar General, in his report for 1912, gives the corresponding crude rate for England and Wales as 1.01 per 1,000, for all urban areas 1.00, and for all rural 1.06. The Cambridge rates are appreciably in excess of these both in town and country.

The following figures shew a steady rise with slight interruptions, as in 1913, in the proportion of deaths attributed to cancer.

		Deaths.		Rate per 1000.
1903	..	121	..	0.99
1904	..	131	..	1.06
1905	..	135	..	1.09
1906	..	147	..	1.18
1907	..	154	..	1.23
1908	..	152	..	1.20
1909	..	154	..	1.21
1910	..	161	..	1.26
1911	..	141	..	1.09
1912	..	177	..	1.36

	Deaths.		Rate per 1000.
Average for 10 years			
1903-1912	147	..	1.17
Average for 5 years			
1908-1912	157	..	1.23
1913 ...	171	..	1.31

The relative mortality in individual districts during 1912 was as follows:—Cambridge Borough 1.22, Caxton and Arrington Rural 0.9, Chesterton Rural 1.4, Linton Rural 2.08 Melbourn Rural 0.7, Newmarket Rural 1.29, and Swavesey Rural 2.6 all in rates per 1,000 living.

The Director of the Imperial Cancer Research Fund has continued to investigate alleged instances of “cancer streets” and “cancer houses” put forward to prove the infectivity of cancer, a view which he considers is not supported by fact. An example which recently attained great public prominence was investigated, and enquiry shewed (a) that the total number of deaths alleged to be due to cancer and the number of deaths in individual houses were in excess of the facts, (b) that very long intervals of time separated some of the cases, and (c) that the street was mainly occupied by retired people whose age was especially favourable to the development of cancer. The infective house theory, therefore, was not supported by this particular enquiry, but it is desirable that disinfection should be carried out after the termination of a case, in order to prevent septic infection from the discharges which frequently are caused by this disease.

Respiratory Death-Rate.—There were 198 deaths from non-tubercular diseases of the respiratory organs, against 240 in 1912, a decrease of 42. Climatic conditions had doubtless a considerable influence in bringing this reduction

about, a wet year being succeeded by a year with a rainfall below the average. The mortality rate for the whole County was 1.52 per 1,000 living. There were 59 deaths in Cambridge Borough (1.03 per 1,000 living) and 139 in the rural area (1.90 per 1,000 living). The rural mortality was therefore almost double that obtaining in the urban area.

Of the 198 deaths, 96 were registered as due to bronchitis, 74 as due to pneumonia (all forms) and 28 to other respiratory diseases. The proportion of pneumonia to bronchitis was practically identical in both urban and rural areas.

FRANK ROBINSON,

County Medical Officer of Health.

Cambridge, 1914.

TABLE I.

VITAL STATISTICS OF WHOLE COUNTY DURING 1913 AND PREVIOUS FIVE YEARS.

YEAR.	Population estimated to middle of each year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFER-ABLE DEATHS†		NETT DEATHS BELONGING TO THE DISTRICT.			
		Uncorrected Number.	Nett.		* Number.	Rate.	Of Non-residents registered in the District.	Of Residents not registered in the District.	Under 1 Year of Age.		At all Ages.	
			Number.	Rate.					* Number.	Rate per 1000 Nett Births.	* Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1908	125973	2645	2647	21·0	1758	13·1	151	137	273	103	1744	13·8
1909	126822	2775	2776	21·8	1706	13·4	170	151	201	72	1687	13·3
1910	127677	2661	2667	20·8	1558	12·2	141	128	173	67	1545	12·1
1911	128537	2568	2579	20·0	1692	13·1	171	163	252	97	1684	13·1
1912	129403	2624	2633	20·3	1702	13·1	152	142	175	66	1692	13·0
Averages for years 1908-1912.	127682	2654	2660	20·6	1683	13·2	157	144	215	80	1670	13·1
1913	130253	2500	2511	19·3	1673	12·8	181	167	188	75	1659	12·7

NOTES.—This Table is arranged to show the gross births and deaths in the district, and the births and deaths properly belonging to it with the corresponding rates. For years before 1911 some of the corrected rates probably will not be available. The rates should be calculated per 1,000 of the estimated gross population.

* In Column 6 are to be included the whole of the deaths registered during the year as having actually occurred within the district.

In Column 12 is to be entered the number in Column 6, corrected by subtraction of the number in Column 8, and by addition of the number in Column 9. Deaths in Column 10 are to be similarly corrected by subtraction of the deaths under 1, included in the number given in Column 8, and by addition of the deaths under 1 included in the number given in Column 9.

† “Transferable Deaths” are deaths of persons who, having a fixed or usual residence in England or Wales, die in a district other than that in which they resided. The deaths of persons without fixed or usual residence, *e.g.*, casuals, must not be included in Columns 8 or 9, except in certain instances specified elsewhere. The Medical Officer of Health will state in Column 8 the number of transferable deaths of “non-residents” which are to be deducted, and will state in Column 9 the number of deaths of “residents” registered outside the district which are to be added in calculating the nett death-rate of his district.

Area of District in acres (exclusive of area covered by water)	...	314,520	} At Census of 1911.
Total population at all ages	...	128,322	
Number of inhabited houses	...	30,950	
Average number of persons per house	...	4·15	

TABLE II.

Cases of Infectious Disease notified during the Year 1912 in the Administrative County of Cambridge and its Districts.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE COUNTY.								TOTAL CASES NOTIFIED IN EACH DISTRICT.							NO. OF CASES REMOVED TO HOSPITAL FROM EACH DISTRICT.						
	At all Ages.	At Ages—Years.							Borough of Cambridge.	Chesterton Rural District.	Caxton and Arrington Rural District.	Linton Rural District.	Melbourn Rural District.	Newmarket Rural District.	Swavesey Rural District.	Borough of Cambridge.	Chesterton Rural District.	Caxton and Arrington Rural District.	Linton Rural District.	Melbourn Rural District.	Newmarket Rural District.	Swavesey Rural District.
		Under 1	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and upwards.														
Small-pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cholera (c) Plague (p)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria including Membranous croup }	202	2	30	129	19	15	6	1	101	43	1	2	—	54	1	*83	4	No Isolation Hospital (except one for Small-pox, which has not been opened during the year). Have an arrangement with Biggleswade Isolation Hospital.	No Isolation Hospital.	1	40	No Isolation Hospital, but have an arrangement with Chesterton Rural Isolation Hospital.
Erysipelas	58	—	3	2	4	13	20	16	29	8	3	6	—	9	3	—	—				—	
Scarlet fever	526	5	97	367	40	15	2	—	312	101	8	25	5	73	2	228	44				58	
Typhus fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				—	
Enteric fever	16	—	—	4	4	7	1	—	8	4	—	—	—	4	—	—	2				2	
Relapsing fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				—	
Continued fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				—	
Puerperal fever	7	—	—	—	2	5	—	—	3	2	1	—	1	—	—	—	—				—	
Cerebro-Spinal Meningitis	2	—	—	2	—	—	—	—	—	1	—	—	—	—	1	—	—				—	
Poliomyelitis	9	—	4	5	—	—	—	—	—	3	—	2	—	4	—	—	1				—	
Pulmonary Tuberculosis	208	—	1	17	44	114	30	2	86	33	8	25	13	40	3	—	—				—	
Other forms of ..	93	—	5	40	25	14	8	1	32	19	6	12	7	12	5	—	—				—	
Totals	1121	7	140	566	138	183	67	20	571	214	27	72	26	196	15	*311	51	—	—	1	100	—

* Does not include 56 Diphtheria "contacts" admitted from the Borough, and 4 Diphtheria cases from Chesterton Rural.
Also Addenbrooke's Hospital treated Puerperal Fever 3, Erysipelas 1, from the Borough, and Enteric 2, Poliomyelitis 1, from Chesterton Rural.

Isolation Hospitals.—Cambridge Borough Infectious Diseases Hospital; Small-pox Station, situated in the Parish of Cherryhinton, and Isolation Hospital at Oakington, both in the Chesterton Rural District; Isolation Hospital of the Royston, Ashwell and Melbourn Joint Board, at Garden Walk, in the Parish of Royston; Newmarket Fever Hospital (a Joint Isolation Hospital [permanent] situated in the Newmarket Urban District); Isolation Hospital for Small-pox for the Parish of Bourn, in the Caxton and Arrington Rural District (not yet used). No sanatorium has yet been provided. Insurance cases are sent to private institutions elsewhere.

Causes of, and Ages at, Death during the Year 1913 in the Administrative County of Cambridge and its Districts.

CAUSES OF DEATH.		NETT DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING WITHIN OR WITHOUT THE DISTRICT.									NETT DEATHS IN OR BELONGING TO DISTRICTS (AT ALL AGES).							TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE COUNTY.
		All ages.	Under 1 year.	1 and under 2.	2 and under 5.	5 and under 15.	15 and under 25.	25 and under 45.	45 and under 65.	65 and upwards.	Borough of Cambridge.	Chesterton Rural.	Caxton and Arrington Rural.	Linton Rural.	Melbourn Rural.	Newmarket Rural.	Swavesey Rural.	
I		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
All Causes	Certified ...	1644	184	41	39	75	64	175	317	749	679	296	99	147	119	267	37	287
	Uncertified ...	15	5	—	2	1	—	1	3	3	1	1	2	3	—	8	—	—
Enteric Fever ...		2	—	—	—	1	—	1	—	—	—	—	—	—	—	2	—	1
Small-pox ...		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles ...		6	1	3	1	1	—	—	—	—	1	3	1	1	—	—	—	—
Scarlet fever ...		7	—	—	4	3	—	—	—	—	4	1	—	—	—	2	—	4
Whooping-cough ...		29	13	11	3	2	—	—	—	—	12	8	—	1	3	1	4	—
Diphtheria and Croup ...		43	1	—	9	26	3	4	—	—	22	10	1	1	—	9	—	18
Influenza ...		22	1	—	1	—	1	5	5	9	11	6	1	2	—	2	—	—
Erysipelas ...		1	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—
Phthisis (Pulmonary Tuberculosis) ...		108	—	1	1	6	26	53	18	3	48	17	7	9	5	20	2	18
Tuberculous Meningitis ...		6	1	—	—	2	—	1	—	—	4	1	—	—	—	1	—	2
Other tuberculous diseases...		24	2	1	2	5	—	9	3	2	9	6	2	3	1	3	—	5
Cancer, malignant disease ...		171	—	—	1	—	1	8	77	84	70	33	7	22	6	26	7	26
Rheumatic Fever ...		5	—	—	—	2	—	1	1	1	4	1	—	—	—	—	—	1
Meningitis ...		13	1	1	1	6	2	—	2	—	5	—	—	1	—	3	—	1
Organic Heart Disease ...		186	—	—	—	—	—	9	58	119	68	33	15	17	23	26	4	41
Bronchitis ...		96	9	4	1	—	2	1	18	61	29	13	15	14	8	16	1	1
Pneumonia (all forms) ...		74	19	6	4	2	2	9	10	22	23	11	5	13	6	15	1	14
Other diseases of Respiratory organs ...		28	1	1	—	1	3	1	3	18	17	1	—	1	3	6	—	1
Diarrhoea and Enteritis ...		22	16	1	1	1	—	1	1	1	14	2	1	1	2	2	—	11
Appendicitis and Typhlitis		5	—	—	—	2	2	1	—	—	1	—	—	1	—	3	—	3
Cirrhosis of Liver ...		17	—	—	—	—	—	3	8	6	9	1	2	1	2	2	—	2
Alcoholism ...		5	—	—	—	—	—	3	2	—	3	2	—	—	—	—	—	—
Nephritis and Bright's Disease ...		47	—	—	1	—	4	10	11	21	21	9	—	2	2	12	1	12
Puerperal Fever ...		5	—	—	—	—	1	4	—	—	3	—	1	—	1	—	—	3
Other accidents and Diseases of Pregnancy and Parturition ...		7	1	—	—	—	1	5	—	—	2	—	1	1	1	2	—	—
Congenital Debility and Malformation, including Premature Birth		83	81	1	—	1	—	—	—	—	40	8	3	8	4	20	—	4
Violent Deaths, excluding Suicide ...		42	4	1	2	4	6	8	9	8	17	13	—	6	1	5	—	13
Suicide ...		16	—	—	—	—	—	4	10	2	9	3	3	—	—	1	—	1
Other Defined Diseases ...		581	35	7	8	11	10	34	82	394	231	115	36	43	51	90	15	103
Diseases ill-defined or unknown...		8	3	1	1	—	—	1	1	1	2	—	—	2	—	4	—	2
		1659	189	41	41	76	64	176	320	752	680	297	101	150	119	275	37	287
Sub-entries included in above figures.																		
Cerebro-spinal Meningitis ...		3	—	—	—	2	1	—	—	—	1	—	—	—	—	—	2	—
Poliomyelitis ...		1	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—

TABLE V.

Vital Statistics of the separate Districts of the Administrative County of Cambridge in 1913 and previous five years.

NAMES OF DISTRICTS.		1. Borough of Cambridge.				2. Chesterton Rural District.				3. Caxton and Arrington Rural District.				4. Linton Rural District.				5. Melbourn Rural District.				6. Newmarket Rural District.				7. Swavesey Rural District.			
YEAR.		Population esti- mated to middle of each year.	Births registered.	Nett Deaths at all Ages.	Nett Deaths under 1 year.	Population esti- mated to middle of each year.	Births registered.	Nett Deaths at all Ages.	Nett Deaths under 1 year.	Population esti- mated to middle of each year.	Births registered.	Nett Deaths at all Ages.	Nett Deaths under 1 year.	Population esti- mated to middle of each year.	Births registered.	Nett Deaths at all Ages.	Nett Deaths under 1 year.	Population esti- mated to middle of each year.	Births registered.	Nett Deaths at all Ages.	Nett Deaths under 1 year.	Population esti- mated to middle of each year.	Births registered.	Nett Deaths at all Ages.	Nett Deaths under 1 year.	Population esti- mated to middle of each year.	Births registered.	Nett Deaths at all ages.	Nett Deaths under 1 year.
		a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
1908	...	39542†	791	594	107	26337†	513	338	45	7821	180	110	16	10615	208	153	26	8556	176	129	18	19641	487	272	46	2468	50	36	2
1909	...	39718†	854	543	71	26730†	570	334	44	7821	166	108	10	10599	201	134	8	8556	188	139	14	19767	477	279	33	2468	50	47	5
1910	...	39894†	799	507	61	27129†	557	284	36	7821	151	83	6	10583	207	136	7	8556	161	131	18	19802	499	255	32	2468	46	55	5
1911	...	40069†	764	551	96	27534†	557	309	43	7775	146	120	14	10563	211	154	24	8538	166	121	17	19884	442	265	39	2584	51	44	4
1912	...	56522	1140	740	82	23446	470	319	35	7775	143	88	5	10546	225	135	14	8538	167	128	11	19914	434	248	26	2598	54	34	2
Averages for Years 1908 to 1912		...	...	...	...	...	...	...	...	7803	157	102	10	10581	210	142	16	8549	172	130	16	19802	468	264	35	2517	50	43	4
1913	...	57096	1109	680	82	23664	447	297	30	7765	139	101	5	10528	173	150	20	8534	140	119	16	20055	458	275	32	2612	45	37	3

† Before extension of Cambridge Borough.

TABLE VI.

Administrative County and its Districts. Deaths from the seven principal epidemic diseases during the year 1913 and the antecedent five years, with the mean death-rates calculated per 1,000 of the estimated population.

Year.	Administrative County.							Borough of Cambridge.							Chesterton Rural District.							Caxton and Arrington Rural District.							Linton Rural District.							Melbourn Rural District.							Newmarket Rural District.							Swavesey Rural District.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Enteric Fever.	Diarrhoea.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Enteric Fever.	Diarrhoea.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Enteric Fever.	Diarrhoea.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Enteric Fever.	Diarrhoea.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Enteric Fever.	Diarrhoea.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Enteric Fever.	Diarrhoea.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Enteric Fever.	Diarrhoea.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
1908	...	43	2	19	57	4	19	...	33	...	6	32	...	9	...	1	...	6	4	3	2	2	1	1	...	8	...	2

NOTE.—Diarrhoea figures for 1911, 1912 and 1913 relate to deaths from this cause, including Enteritis, under two years only. Prior to this deaths at all ages were included.

TABLE VII.
COUNTY OF CAMBRIDGE.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS 1912.

Summary of notifications during the period from 1st February 1913 to the end of the week ending 3rd January 1914.

Age Periods.	Number of Notifications on Form A.													Number of Notifications on Form B.					Number of Notifications on Form C	
	Primary Notifications												Total Notifications (i.e. including cases previously notified by other doctors)	Primary Notifications.				Total Notifications (i.e. including cases previously notified by other doctors)	Poor Law Institutions.	Sanatoria.
	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and upwards	Total.		under 5	5 to 10	10 to 15	Total.			
Pulmonary, Males ...	—	—	3	3	8	19	39	22	11	1	2	108	112	—	—	—	—	—	1	10
Pulmonary, Females ...	—	—	11	4	6	11	25	19	12	6	—	94	96	—	2	—	2	3	1	2
Non-Pulmonary, Males ...	—	3	5	8	6	3	6	6	1	3	—	41	41	—	3	—	3	3	—	—
Non-Pulmonary, Females ...	—	3	8	6	7	3	4	1	1	2	—	33	35	—	2	2	4	4	—	—

Notifications on form A relate to the general population.

„ „ „ B are made by School Medical Staff and relate to School Children.

„ „ „ C relate to admissions of persons known to be tuberculous to Sanatoria and Poor Law Institutions.

